

GEORGE ENGELMANN
BOTANICAL NOTEBOOKS

Pagination Note:

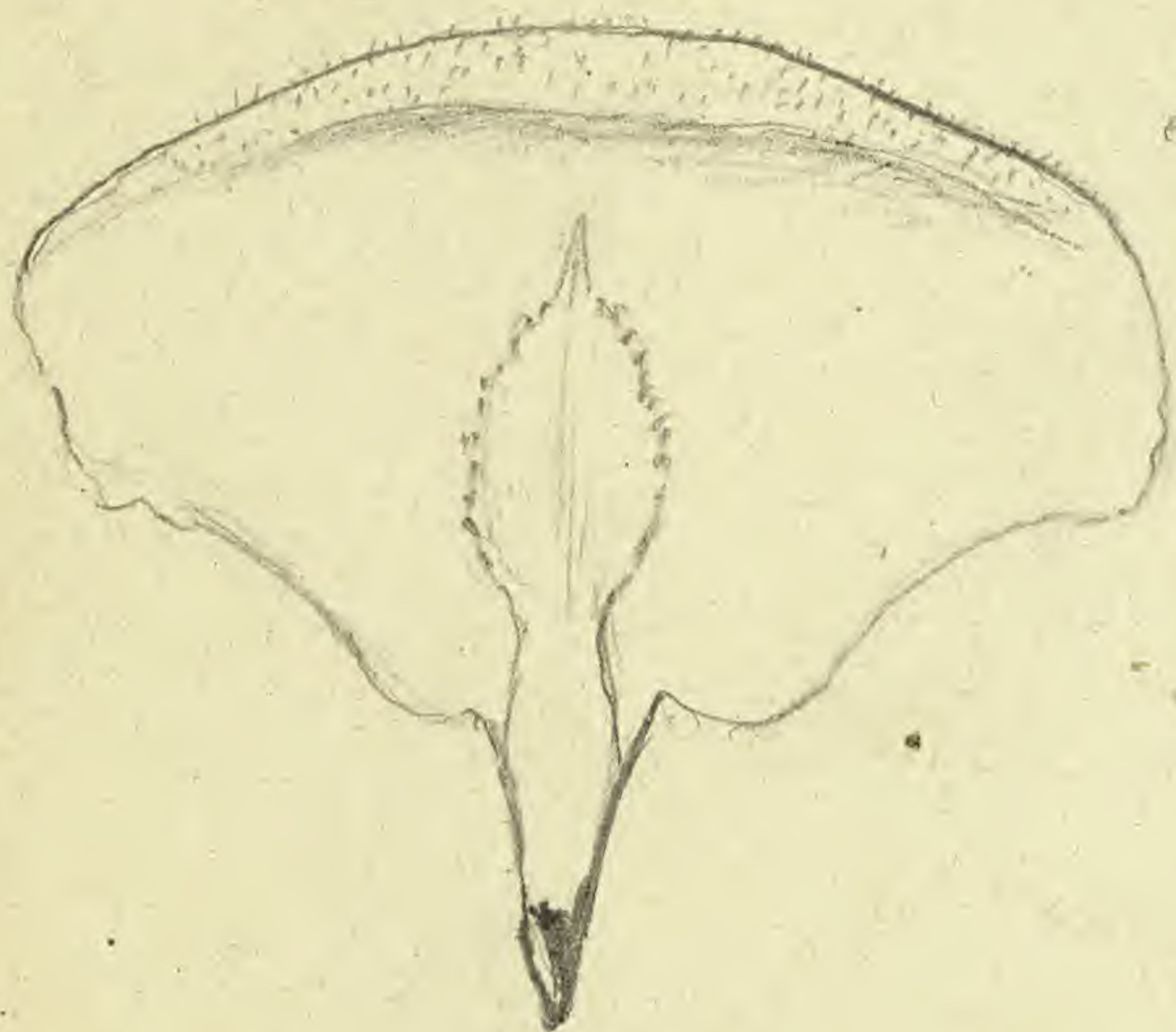
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

"*A. amabilis*"

Sept 5 1870

Big Trees, Bolander

A. magnifica, Murray 1863 !



edge woolly, very narrowly
turned up



x 2

scales without pedicel
width to height = 42 : 25
3 1/3 : 2

seed 14-15 mm long 6 mm wide
2 1/2 times as long as wide
exterior valve of wing with
a prominent tooth, covering not
quite 2/3 of (seed length)



0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI
BOTANICAL
GARDEN

12647

CHEMIST



ALEX. LEITCH,
APOTHECARY & CHEMIST,
Cor. 4th and Olive Sts., St. Louis.

ALL THE NEW REMEDIES
CONSTANTLY ON HAND



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GEORGE ENGELMANN PAPERS



0 1 2 3 4 5 6 7 8 9 10
cm

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scale 36: 21
= 3 1/2 2

"*Abies amabilis*"

April 22nd 1871

Silver Mountain trail Sierras of California

H.W. Brewer

Cone 5 inches long 2 3/4 diam.



Cones always 6 - 8 inches
long and half as wide
purple, until ripe
Lemmon, April 18th 71



0 1 2 3 4 5 6 7 8 9 10

cm

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Leitch & Corlies

CORRIGANS

South West
Corner Fifth
and Market
Streets

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cm

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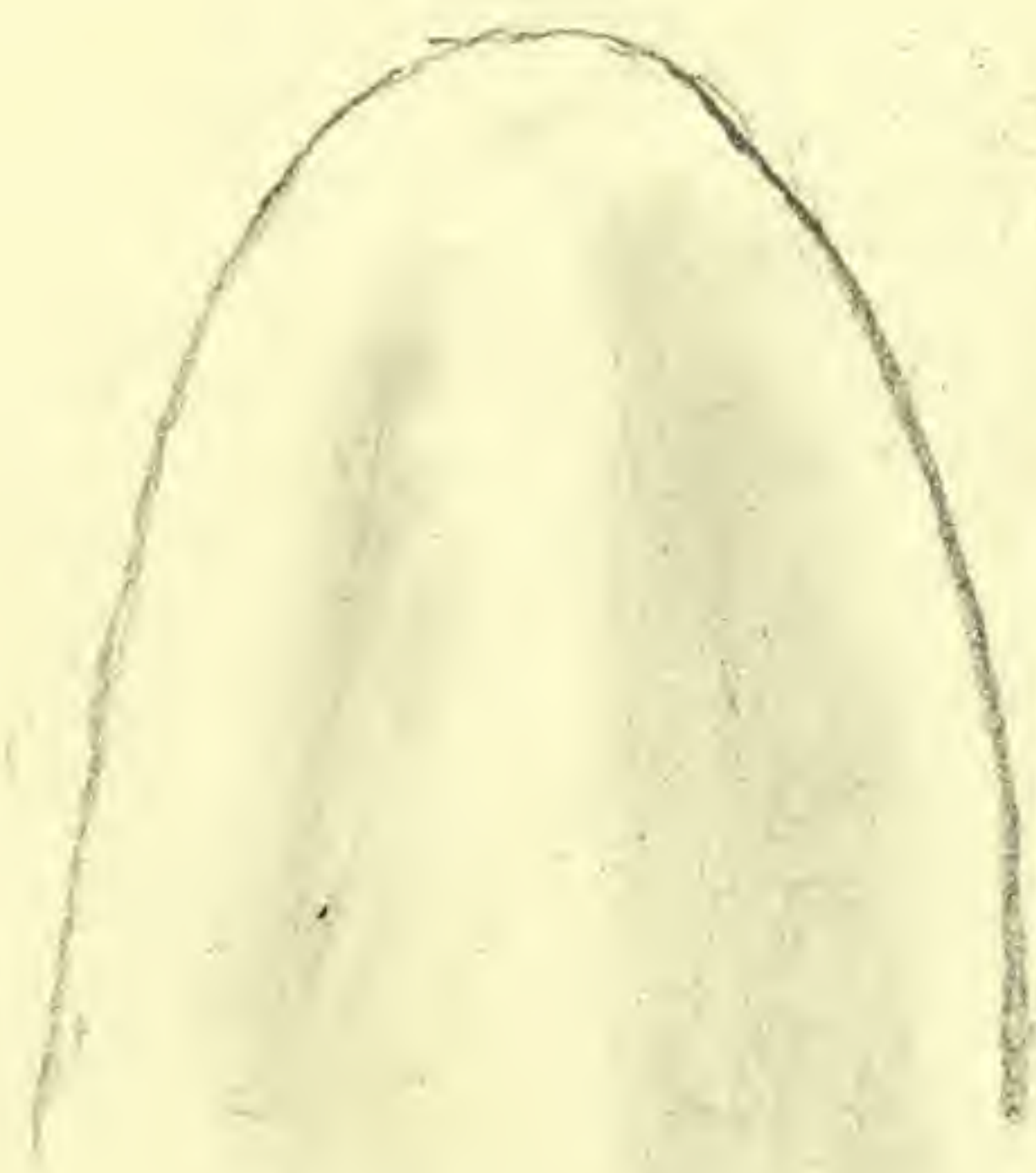
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"*A. umbilicis*"

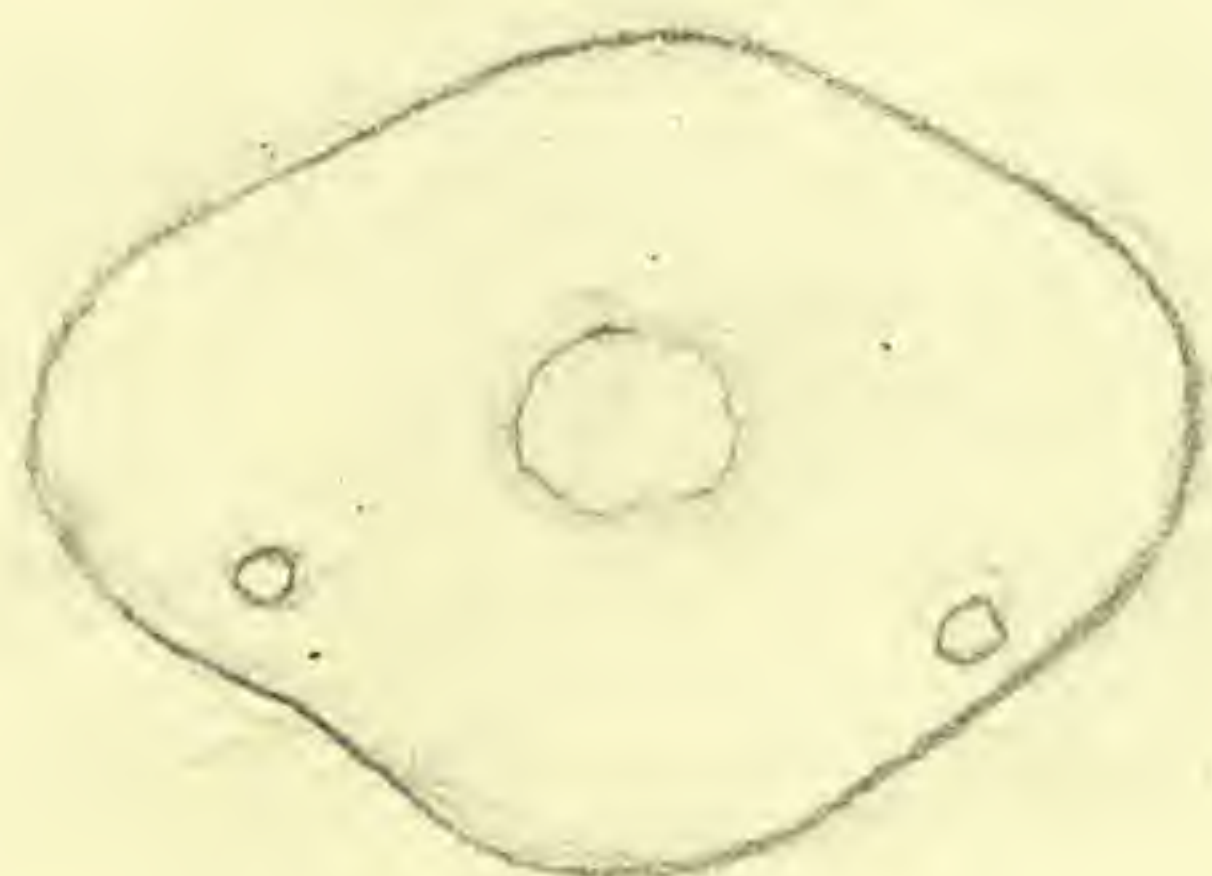
April 9 1872

male flowering plant, Big Trees, Bolander

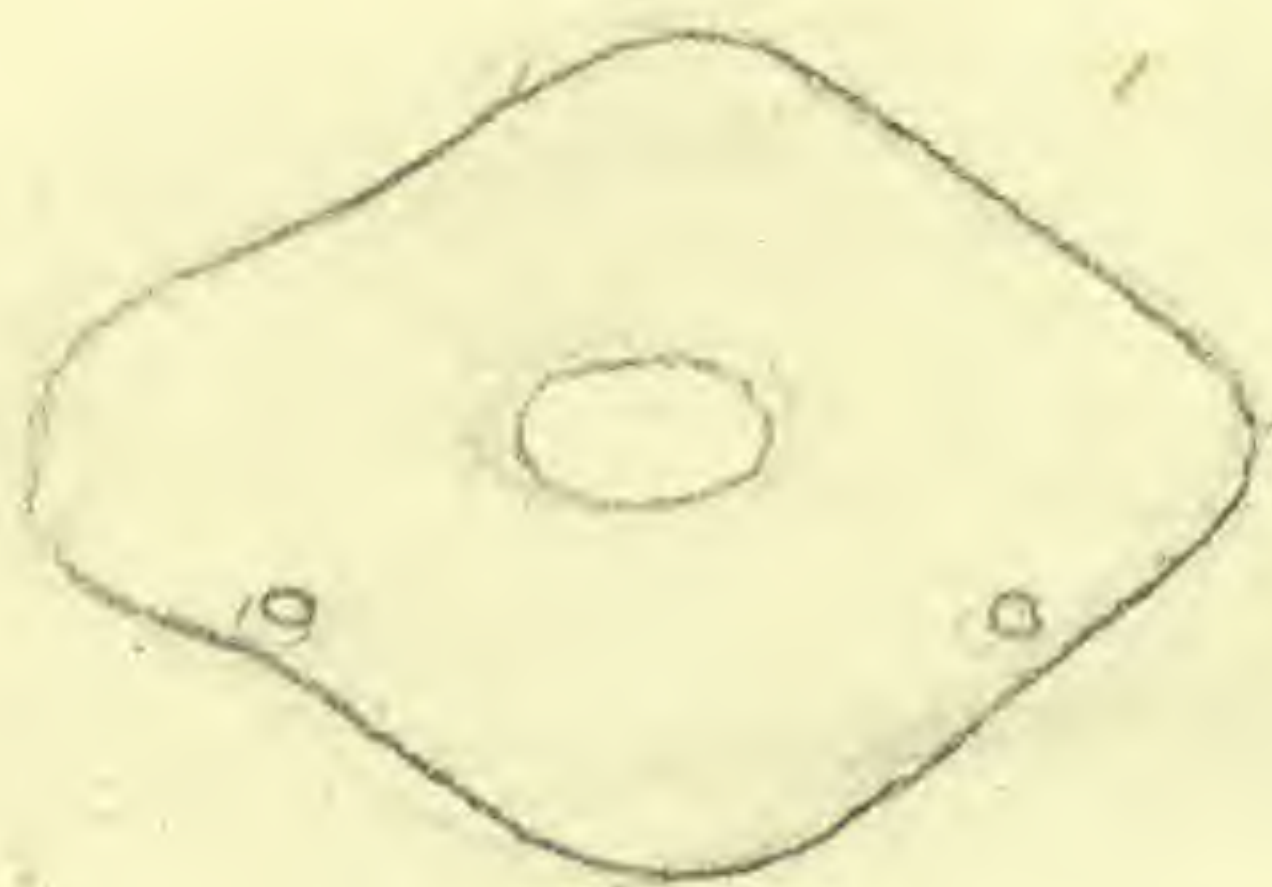
x 10



section
near tip



at middle



near base



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GEORGE ENGELMANN PAPERS
APR 11 1872



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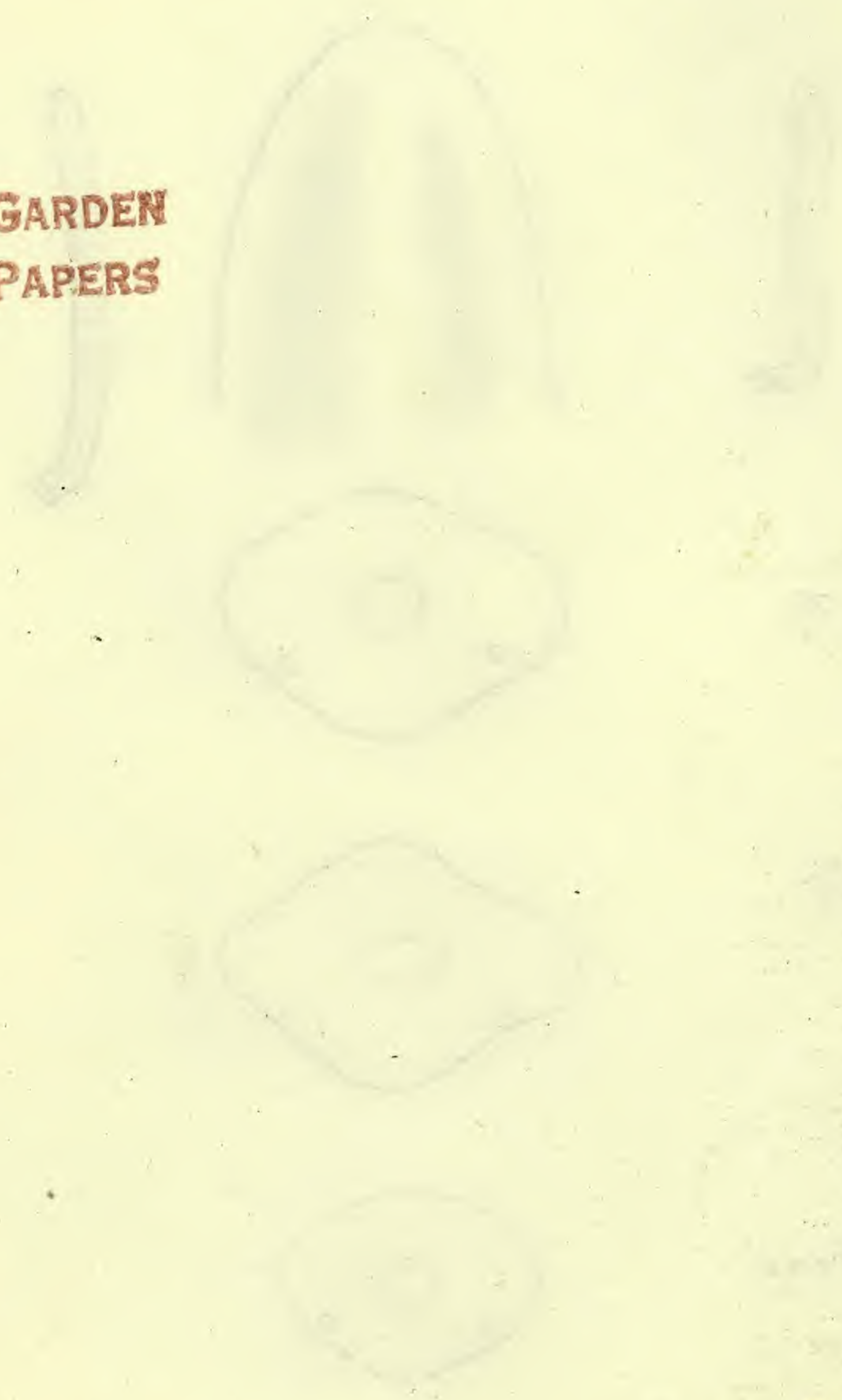
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Leitch & Corlies

DRUGGISTS

South-west
Corner Fifth
and Market
Streets

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cm

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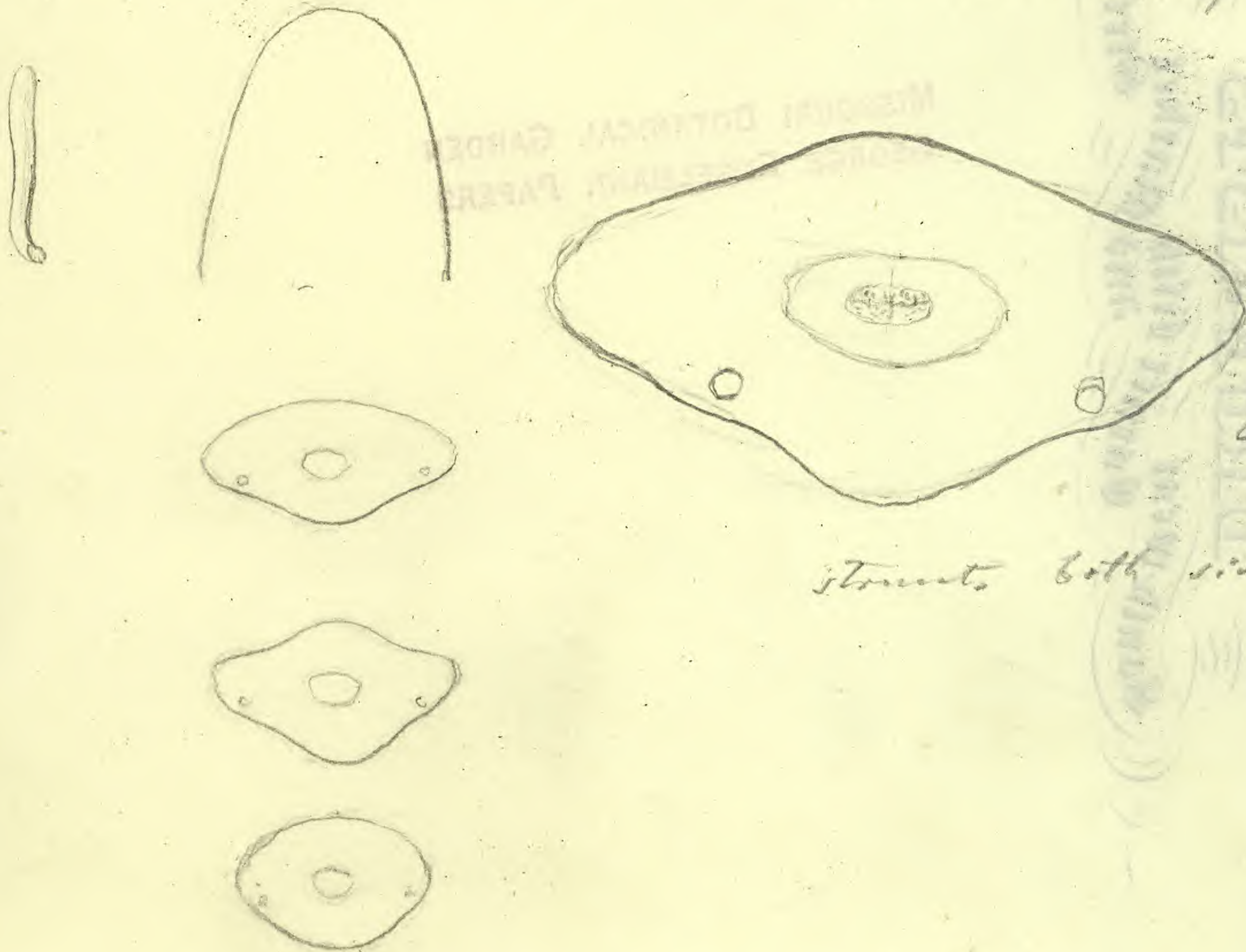
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" *A. nobilis* "

April 13 1872

California, Lobb, in Herb Kew

" tree 150 - 200 feet high "



x 30

Oct 19 '75

stems both sides



0 1 2 3 4 5 6 7 8 9 10

cm

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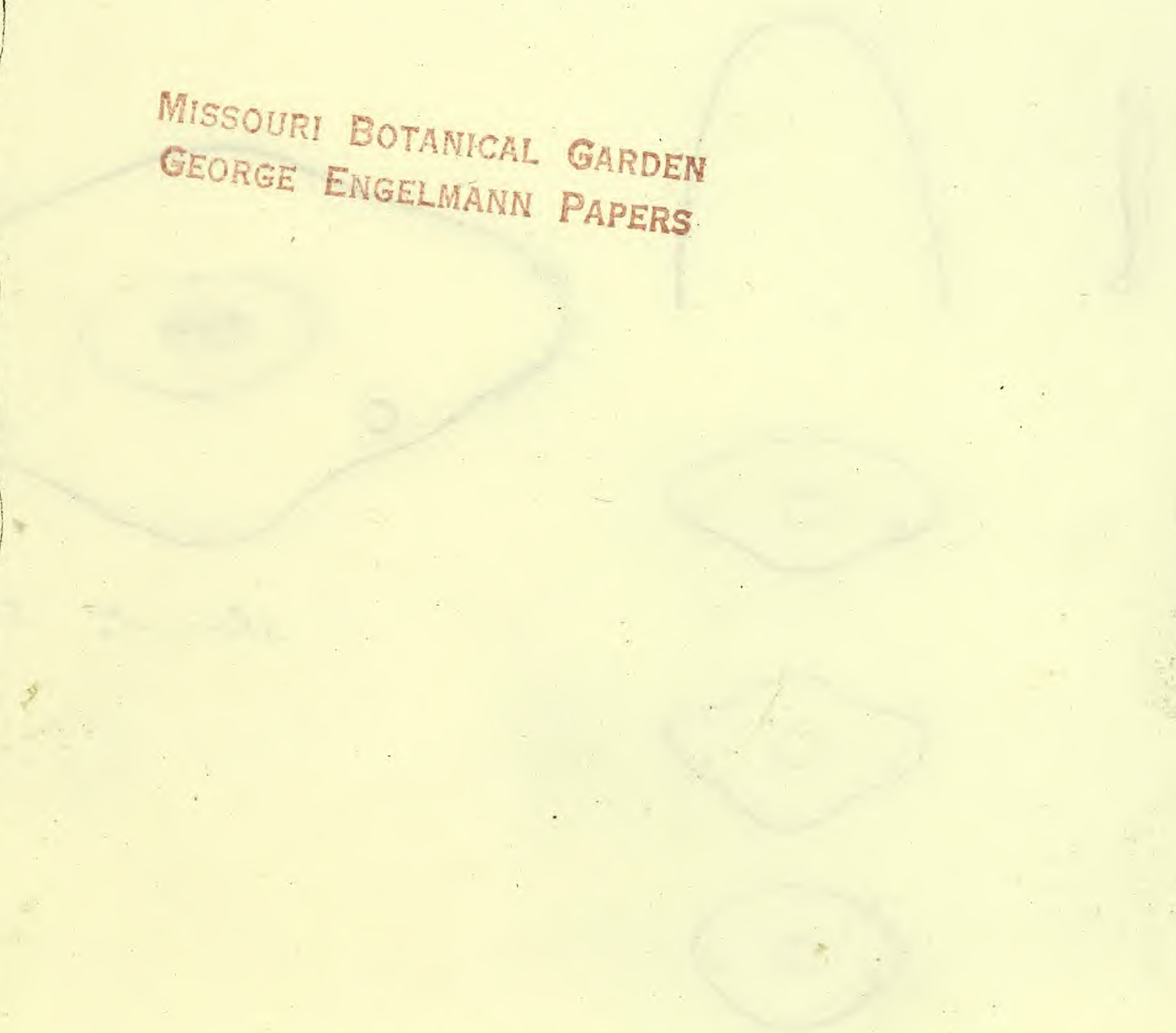
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Streets

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cm

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"*Abies nobilis*"

April 13 1872

California, Lowe - Herb - Keck



X 10

tip of leaf



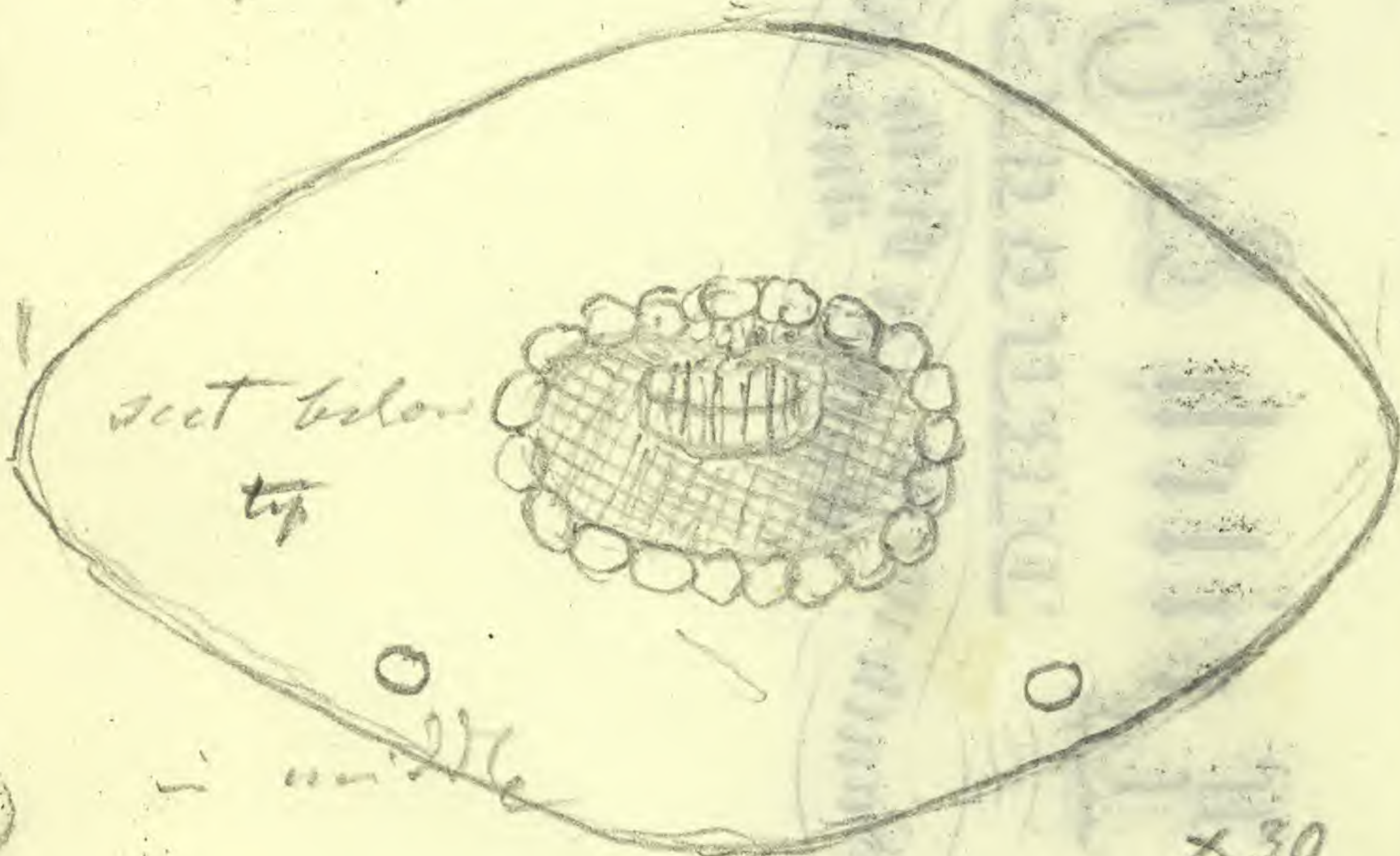
sect below
tip



in middle



above base



X 30

Oct 19 1875



0 1 2 3 4 5 6 7 8 9 10

cm

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DRUGGISTS

*South-west
Corner Fifth
and Market
Streets*

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0 1 2 3 4 5 6 7 8 9 10

cm

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Abies

April 13 1872

Fremont leg N. 32

Dec. 1845



x 10

top of leaf
of leaf



x 30

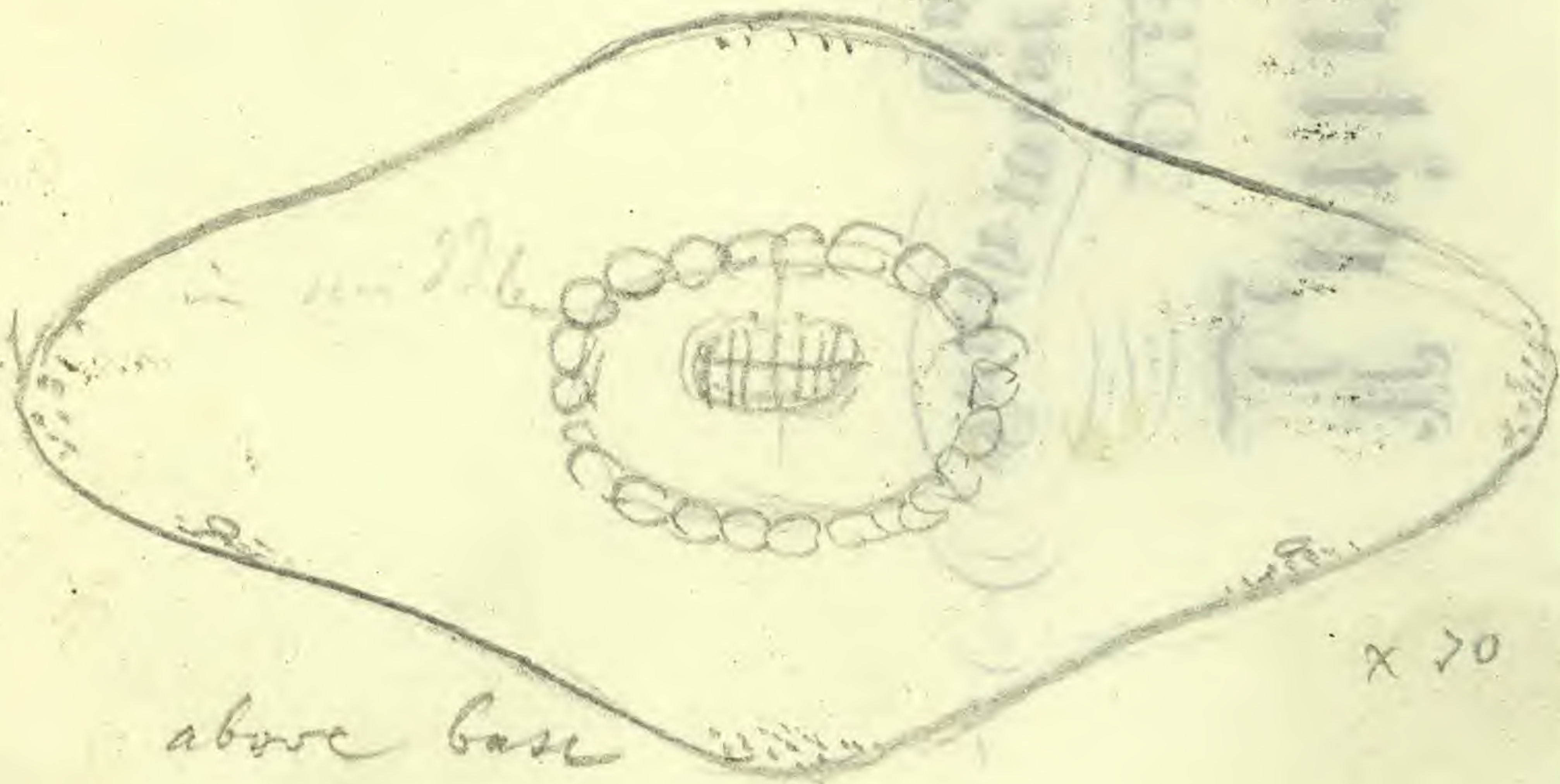


sect of leaf
near top

19 Oct 1875



in middle



x 20

above base



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cm

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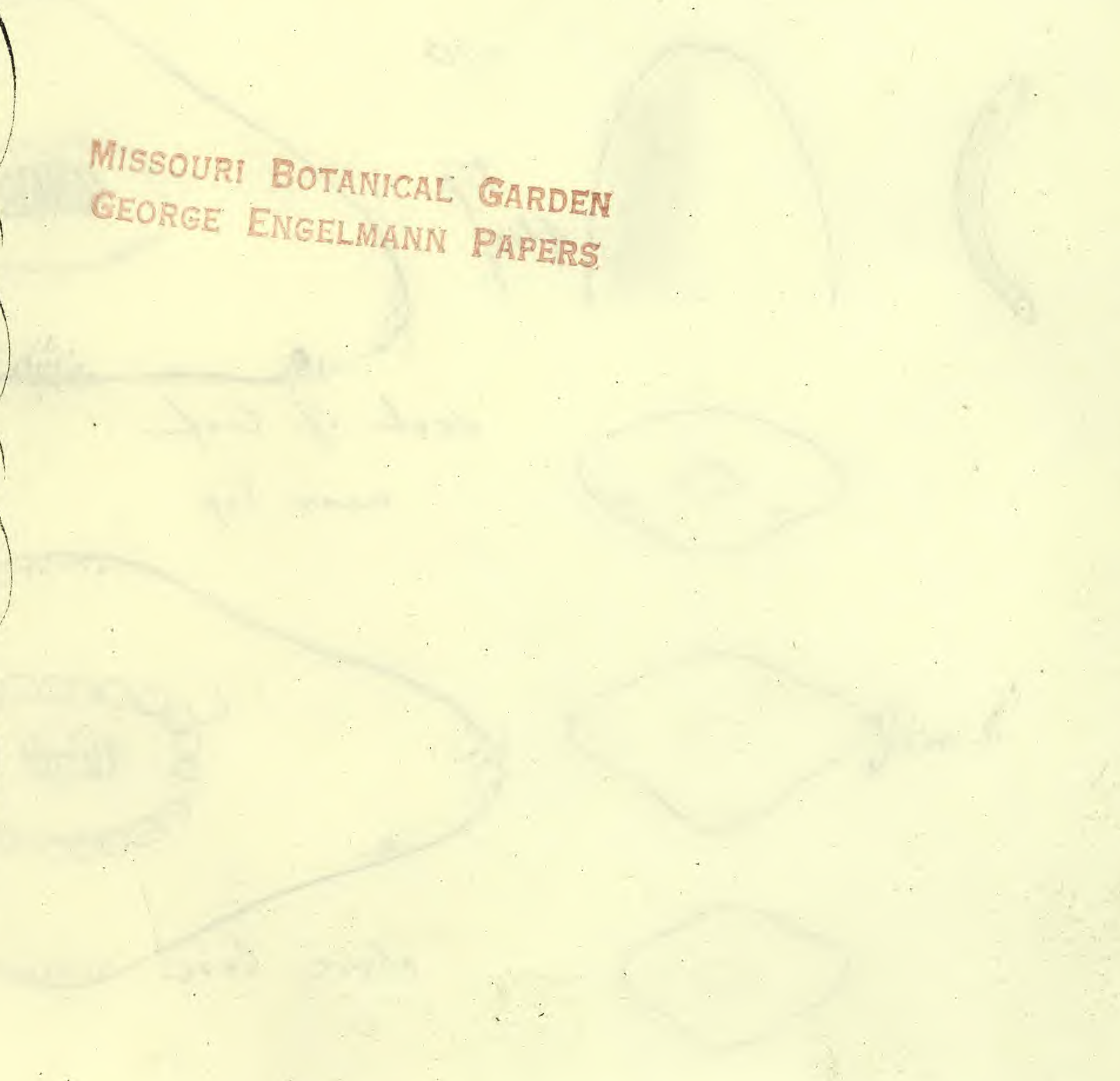
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DRUGGISTS

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Streets

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cm

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522 C1

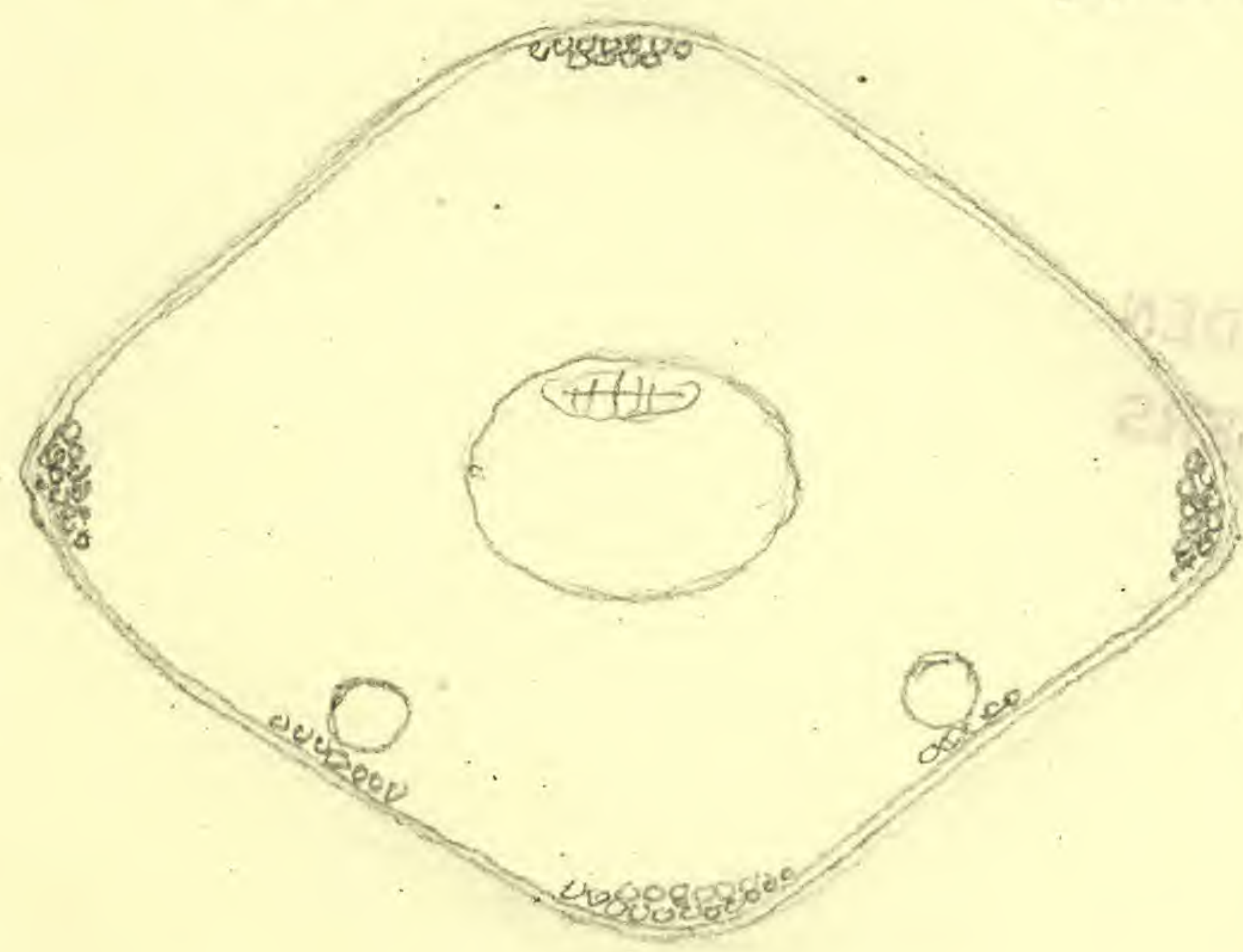
"Abies nobilis"

March 30 1881

x 30

Herb Acad. Philad. 1879

leaf next to the cone



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DRUGGISTS

South-west Fifth and Market Streets

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cm

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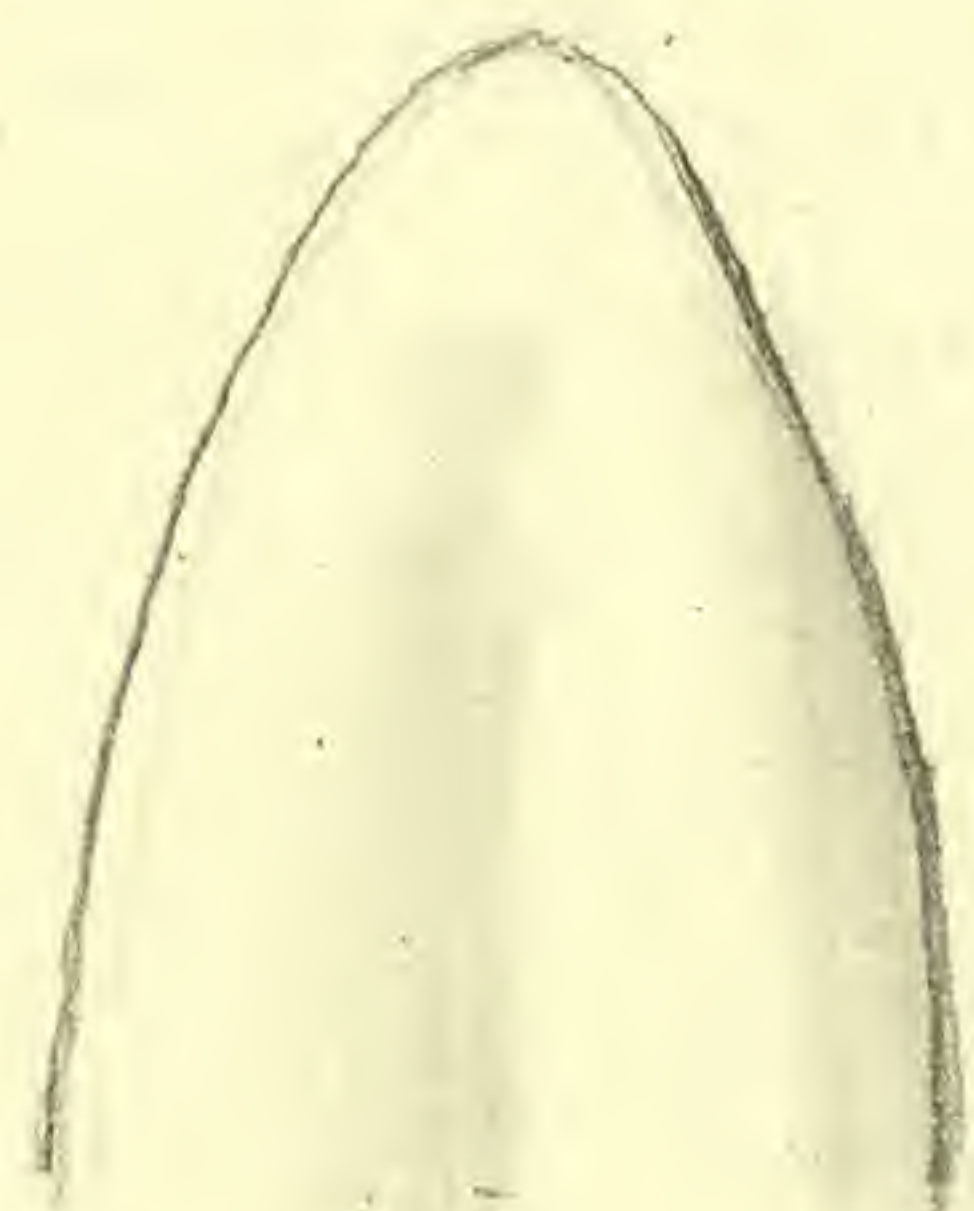
"*Abies robusta* s. *magnifica*"
Herb. bot. Edinburgh 1869

April 8 1872

a young tree, 5 feet high
from California seed



x 10

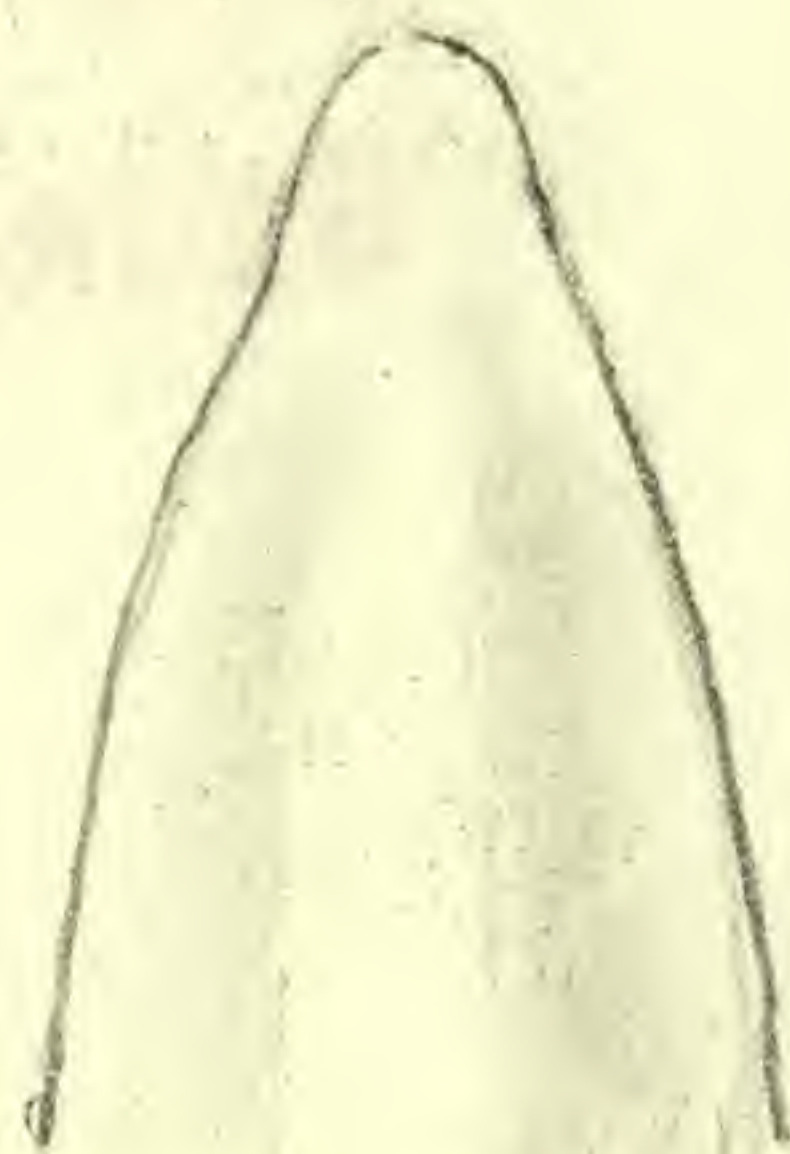


x 30



Oct 20 1875

x 10



cut below top

in middle

in lower part

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cm

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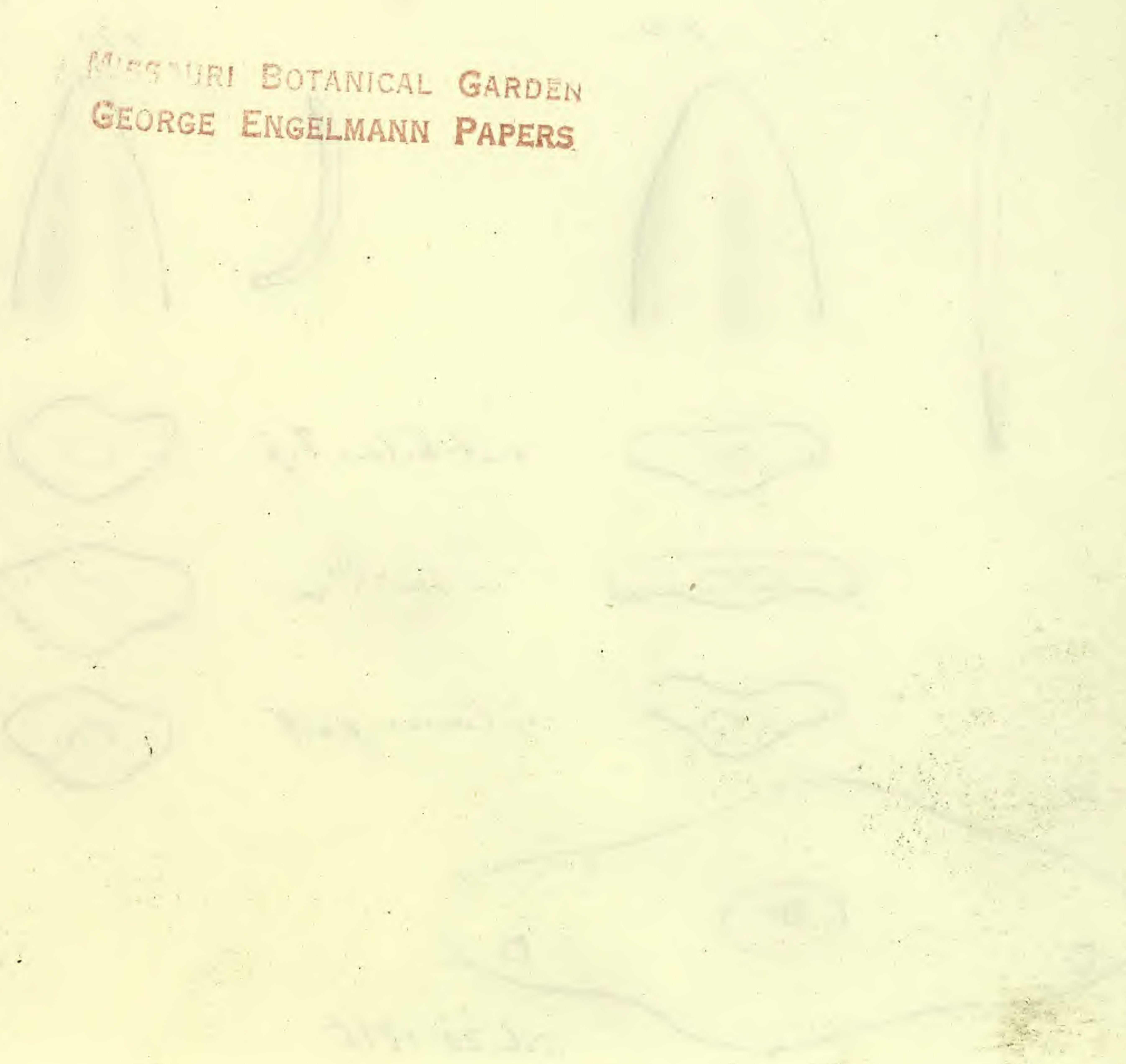
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DRUGGISTS

South-west
Corner Fifth
and Market
Streets

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cm

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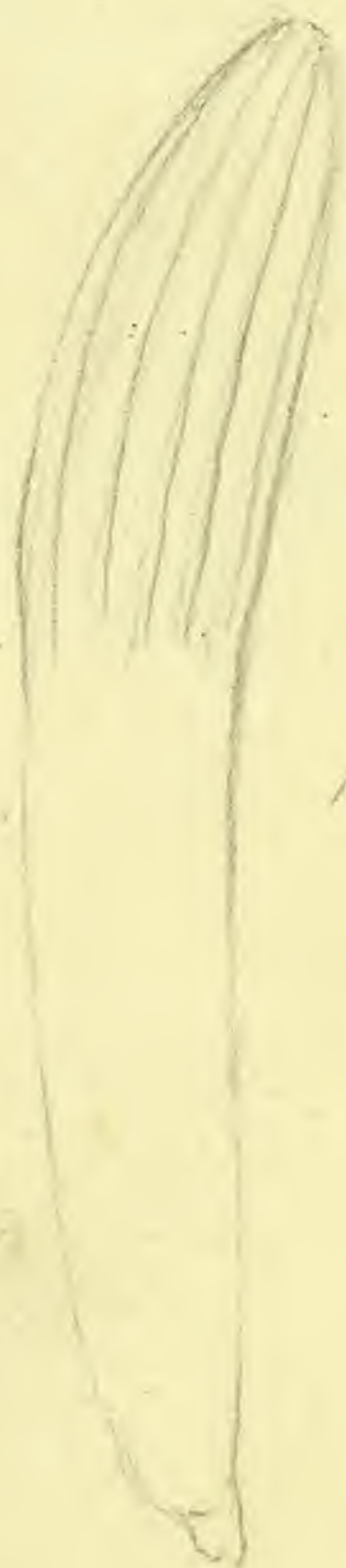
Alnus magnifica

Nov 2 1874

Cone no. 2 from H. Bolander Nov 1874

under the name of *A. Amabilis*

Cone 6 inches long 3 in diameter



embryo

x4



section

10 Cotyled.

Nov 25 74

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0 1 2 3 4 5 6 7 8 9 10

cm

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HENRY EHRHARDT,
PHARMACEUTICAL CHEMIST,

No. 301 South Fifth Street, Cor. Myrtle, ST. LOUIS.

No.

Rx

Date

187

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0 1 2 3 4 5 6 7 8 9 10

cm

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Abies magnifica

July 3rd 1874

Big Trees, Calif - Bolander



♂ament

involucre stiff
with resin



front



upper side

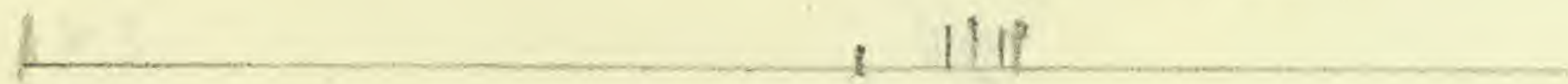


lower side



lateral

anther x 10



Pollen (24) $\frac{28-31}{280} = (0.12) 0.14 - 0.15$ mm long



0 1 2 3 4 5 6 7 8 9 10

cm

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R. C. HARRISON,

508 Leffingwell Avenue,

Druggist & **A**pothecary

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GEORGE ENGELMANN PAPERS

G. F. ENGLEMAN, M.D.,
3003 LOCUST STREET.

280
280
3080
28
356
28
364
28
392
22
420

280	10	=	28
280	11	=	31
280	12	=	33
280	13	=	36
280	14	=	39
280	15	=	42



0 1 2 3 4 5 6 7 8 9 10

cm

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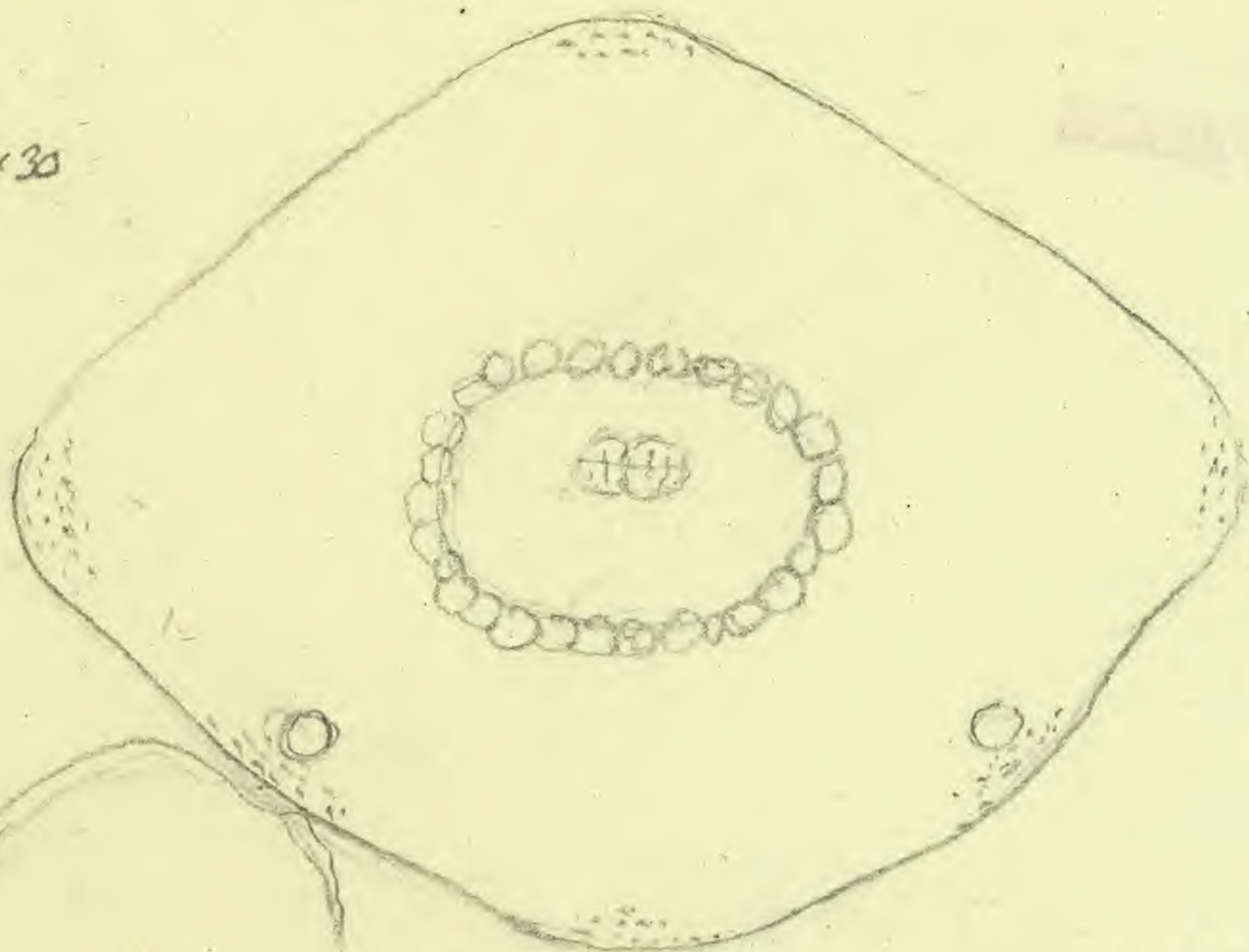
A. magnifica
Sierra Nevada

Octob 21 1875

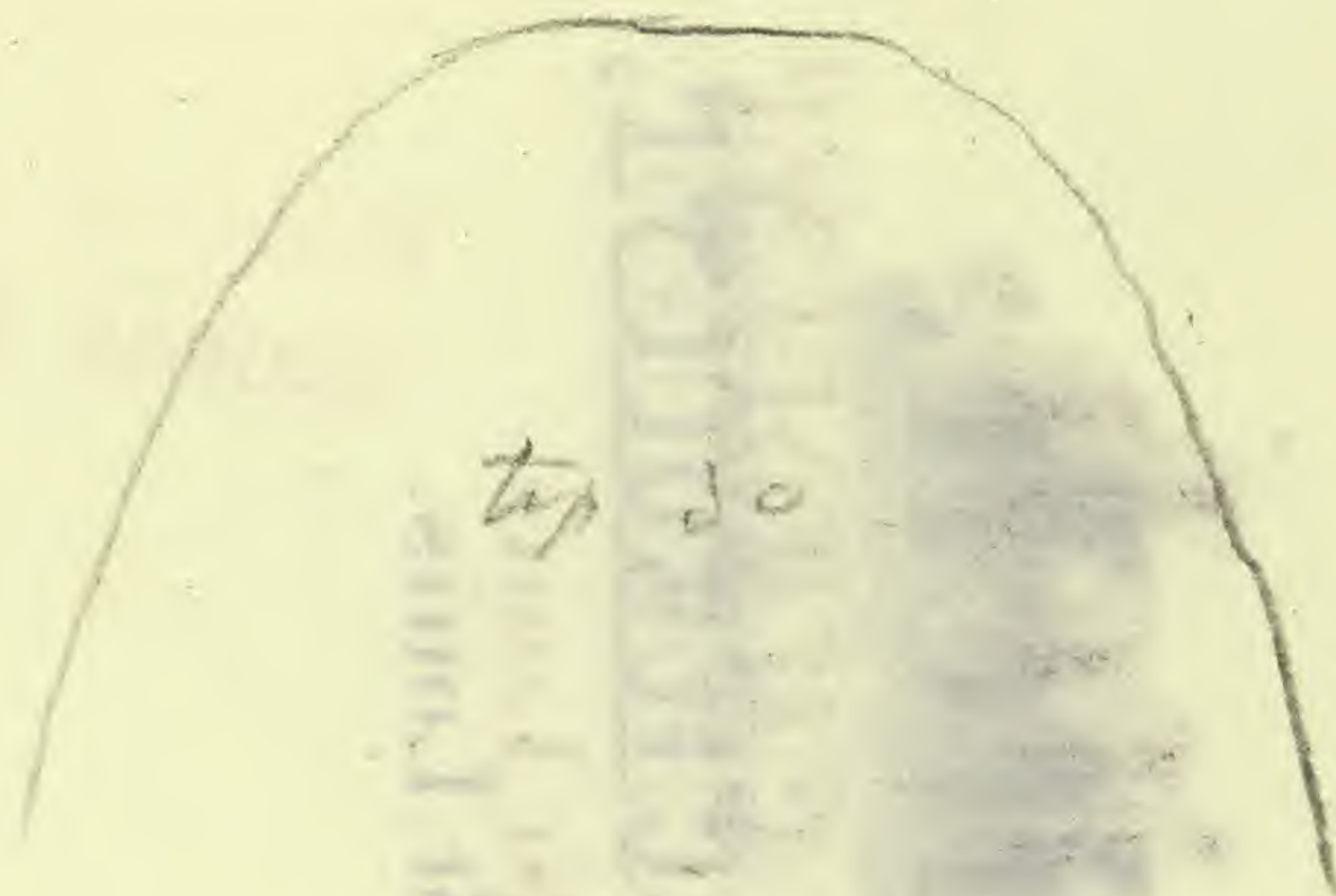
stomata all over

J. G. Semmon 1874

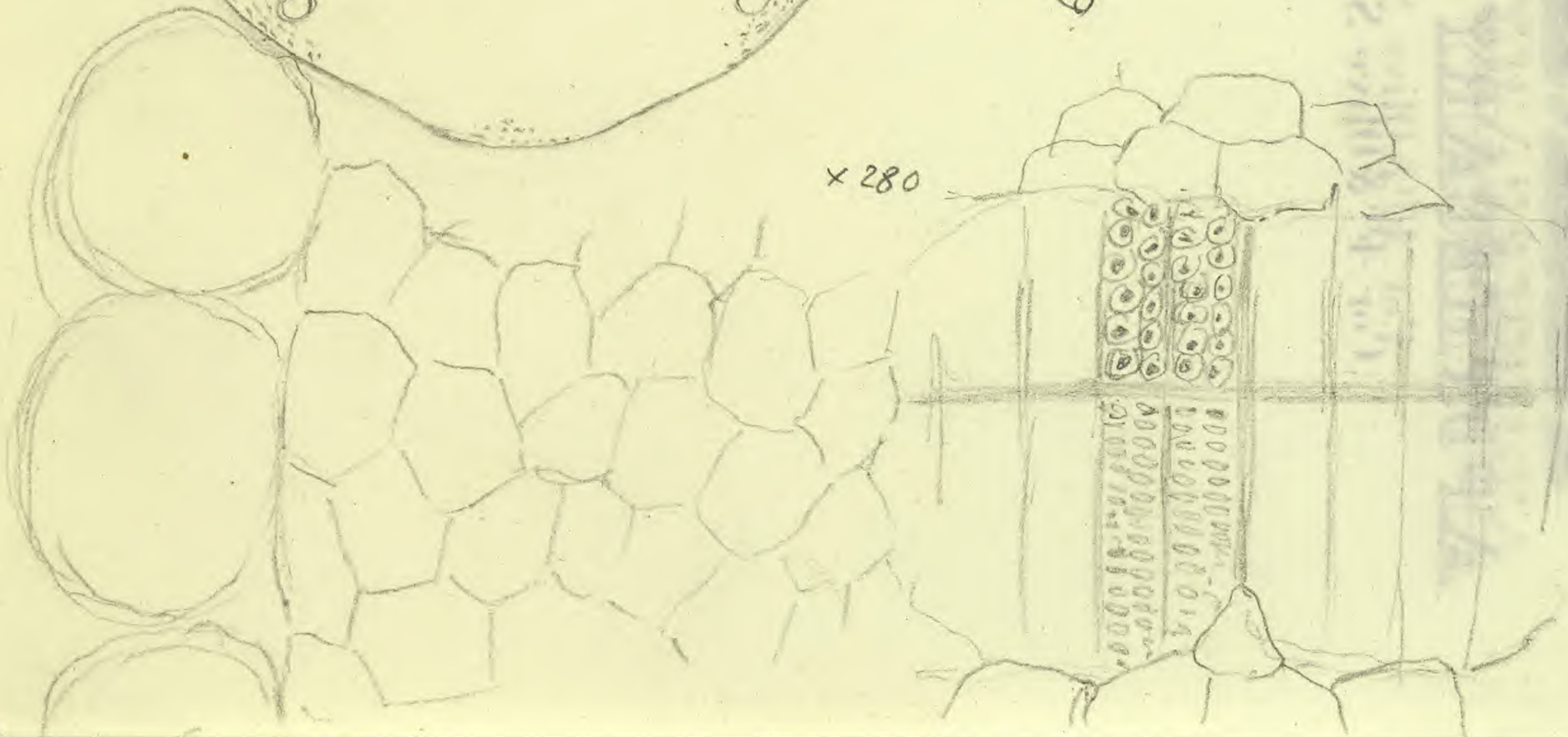
x 30



top do



x 280



0 1 2 3 4 5 6 7 8 9 10

cm

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0 1 2 3 4 5 6 7 8 9 10

cm

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"*Abies magnifica*"

Febr 19 1876

Hort. Edinburgh Aug 30 1869

young tree 3-4 feet high

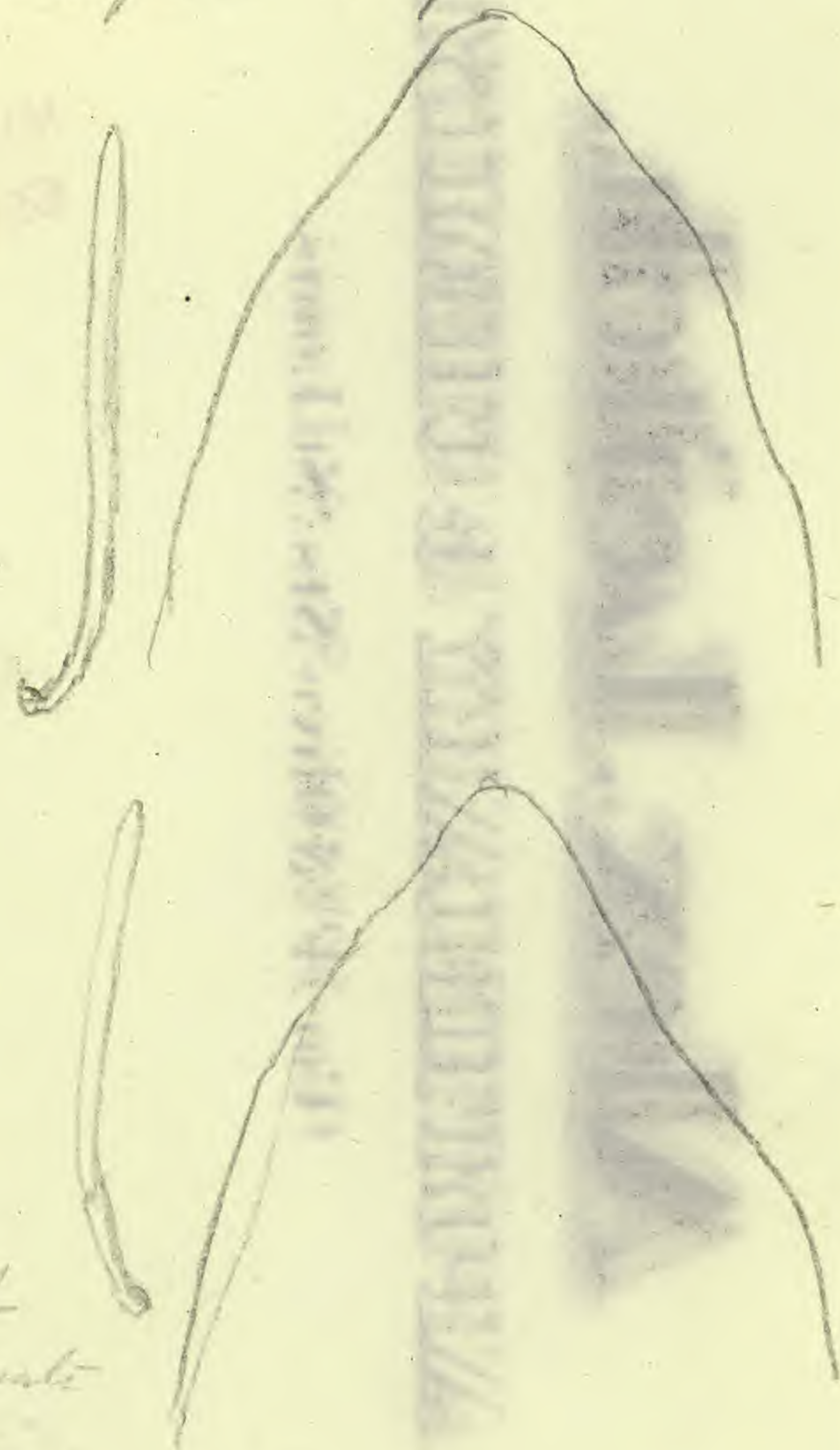
x 30



5-7 lines of stomata in each band below
12-14 lines on upper side



on upper side 10-12 lines of
stomata
on lower side 2 bands, of
4-5 lines each



5-7
12-14



0 1 2 3 4 5 6 7 8 9 10

cm

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0 1 2 3 4 5 6 7 8 9 10

cm

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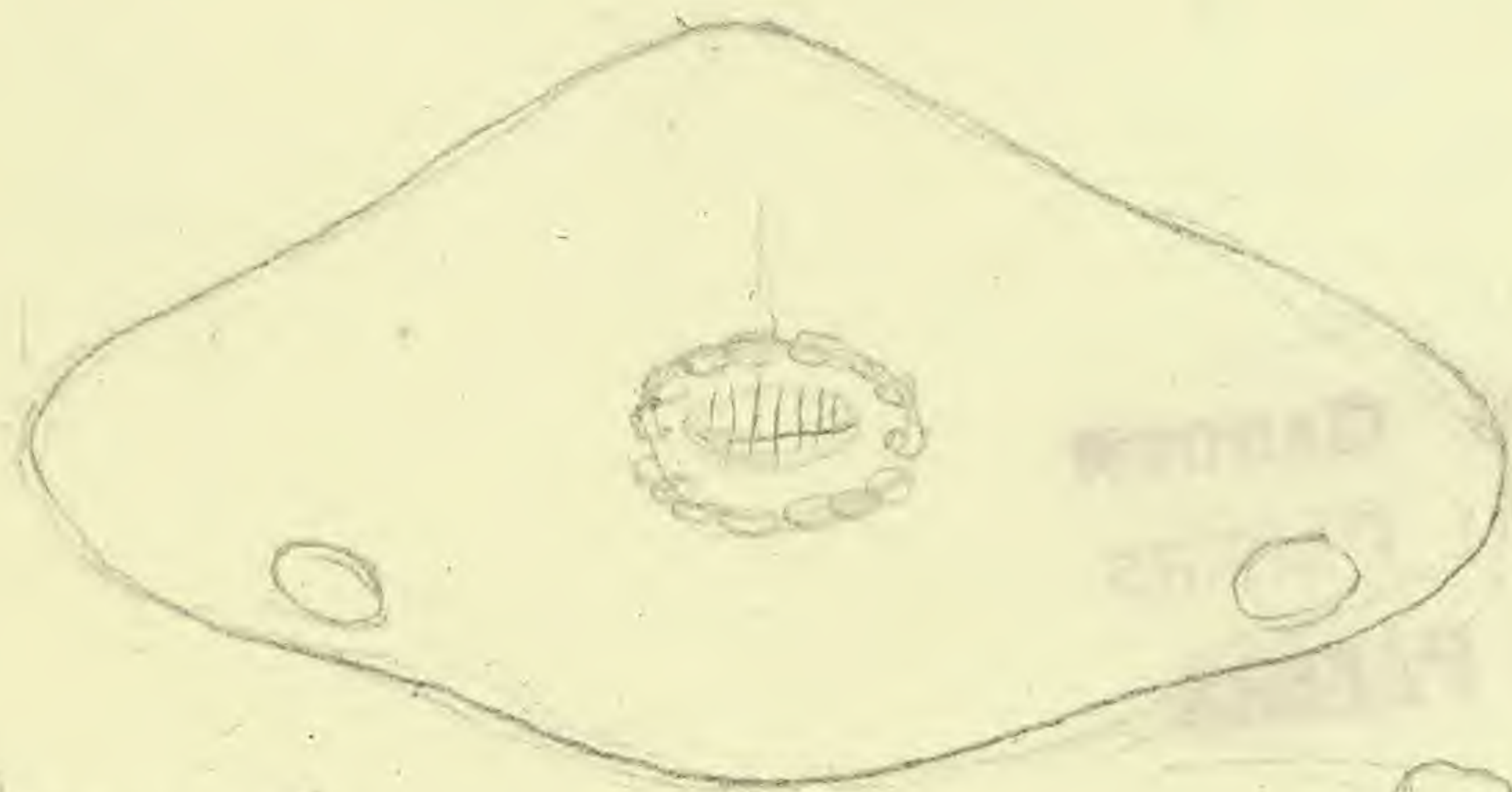
a)

Amagnifera
leaves of a young tree
Sierra Valley Cal
Lemmon

Febr 19 1876

1875

x 30



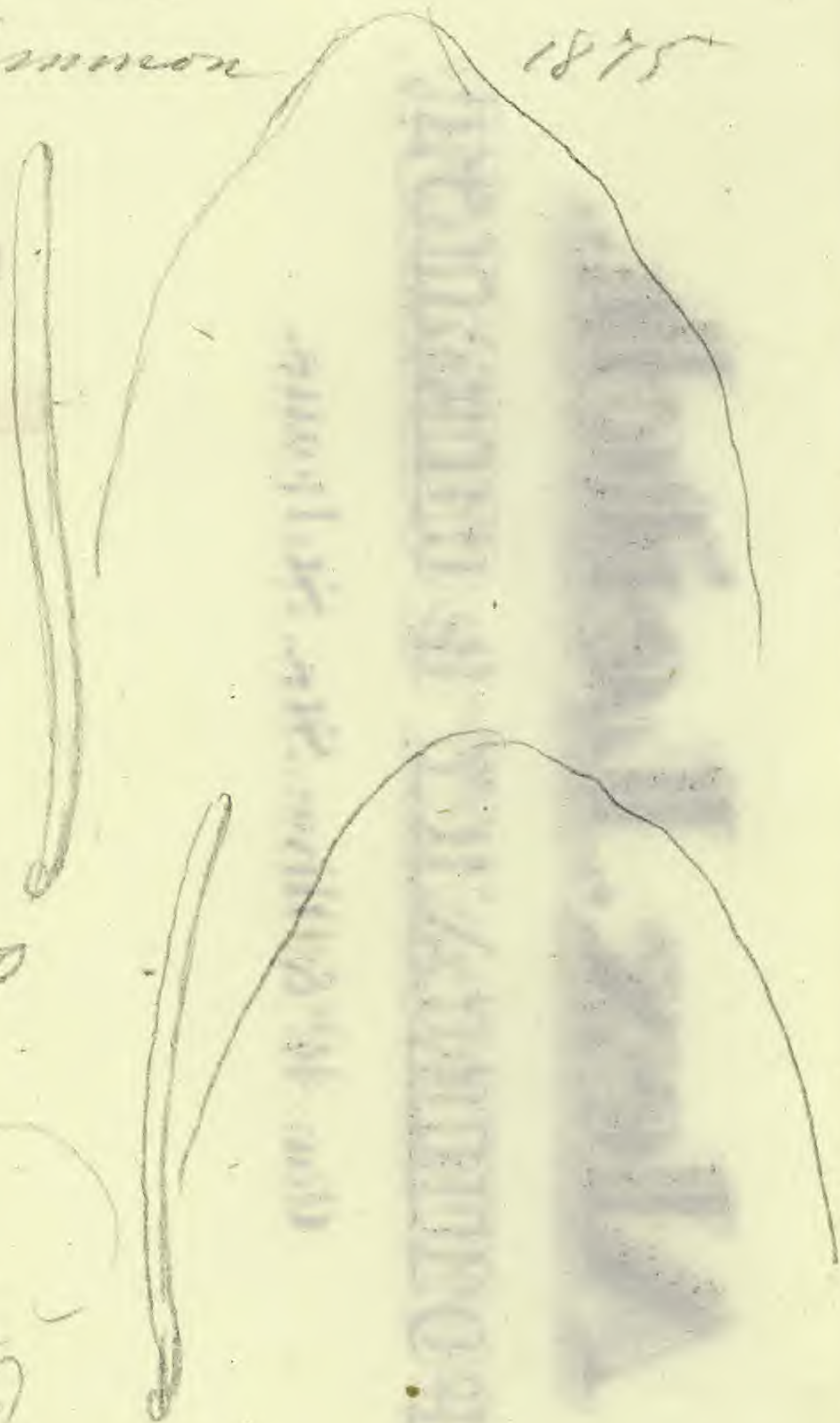
hypoderm only
on 4 edges



12-15 series of
stomata above
2 bands of 5-6 below



x 150



0 1 2 3 4 5 6 7 8 9 10

cm

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2.

A. magnifera

Febr 19 1876

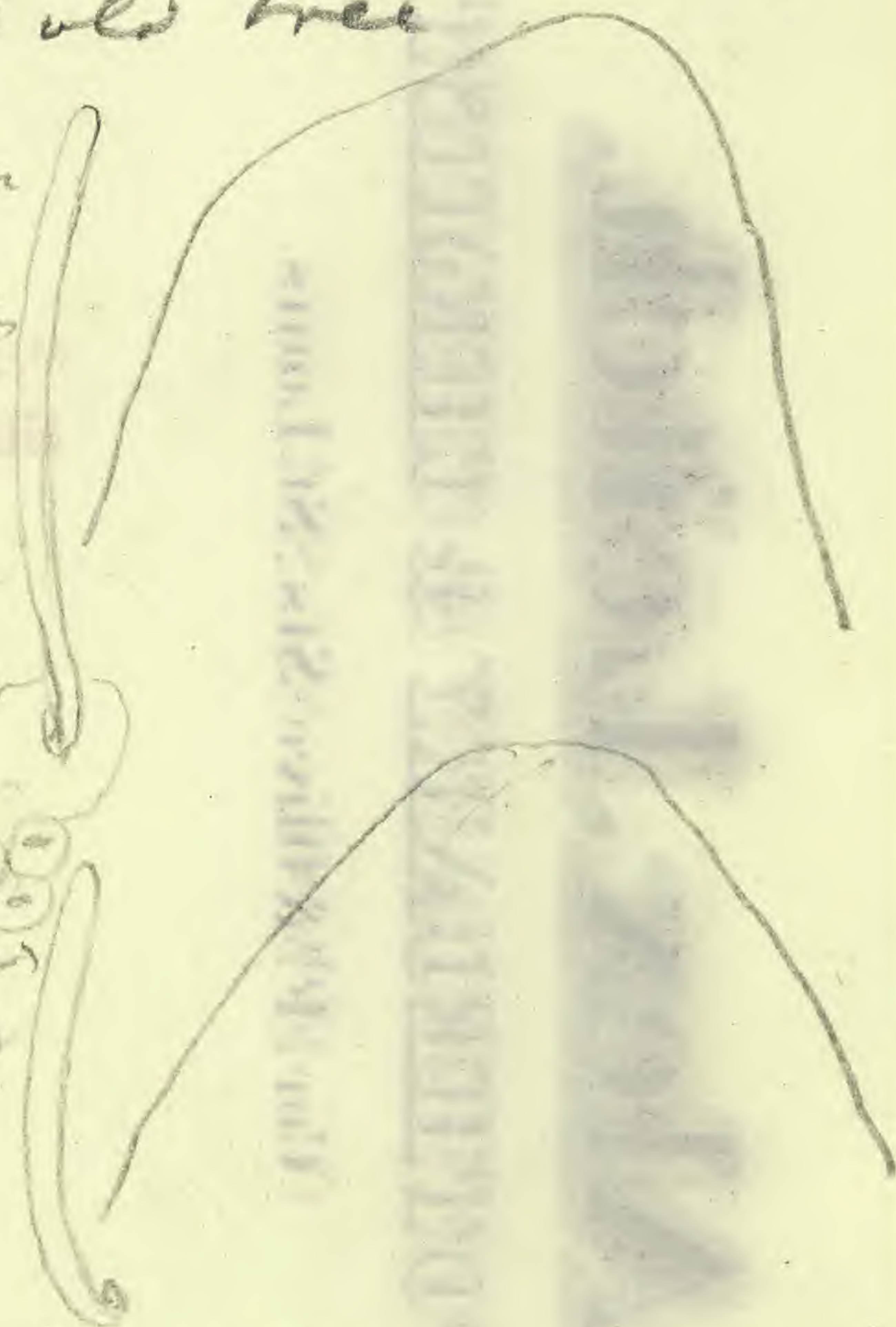
Sierra Valley, Cal. Loomer 1875

sterile branches of old tree

one with long, another
with short leaves

10-12 series of stom
above

2 bands of 6-7 series
below



palisade cells principally at 4 ridges, more crowded at the sides - very few others
 duct surrounded (clothed) with a layer of very thin walled cells. around this another layer of thicker walled cells, both oval in section



0 1 2 3 4 5 6 7 8 9 10

cm

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57/11 21

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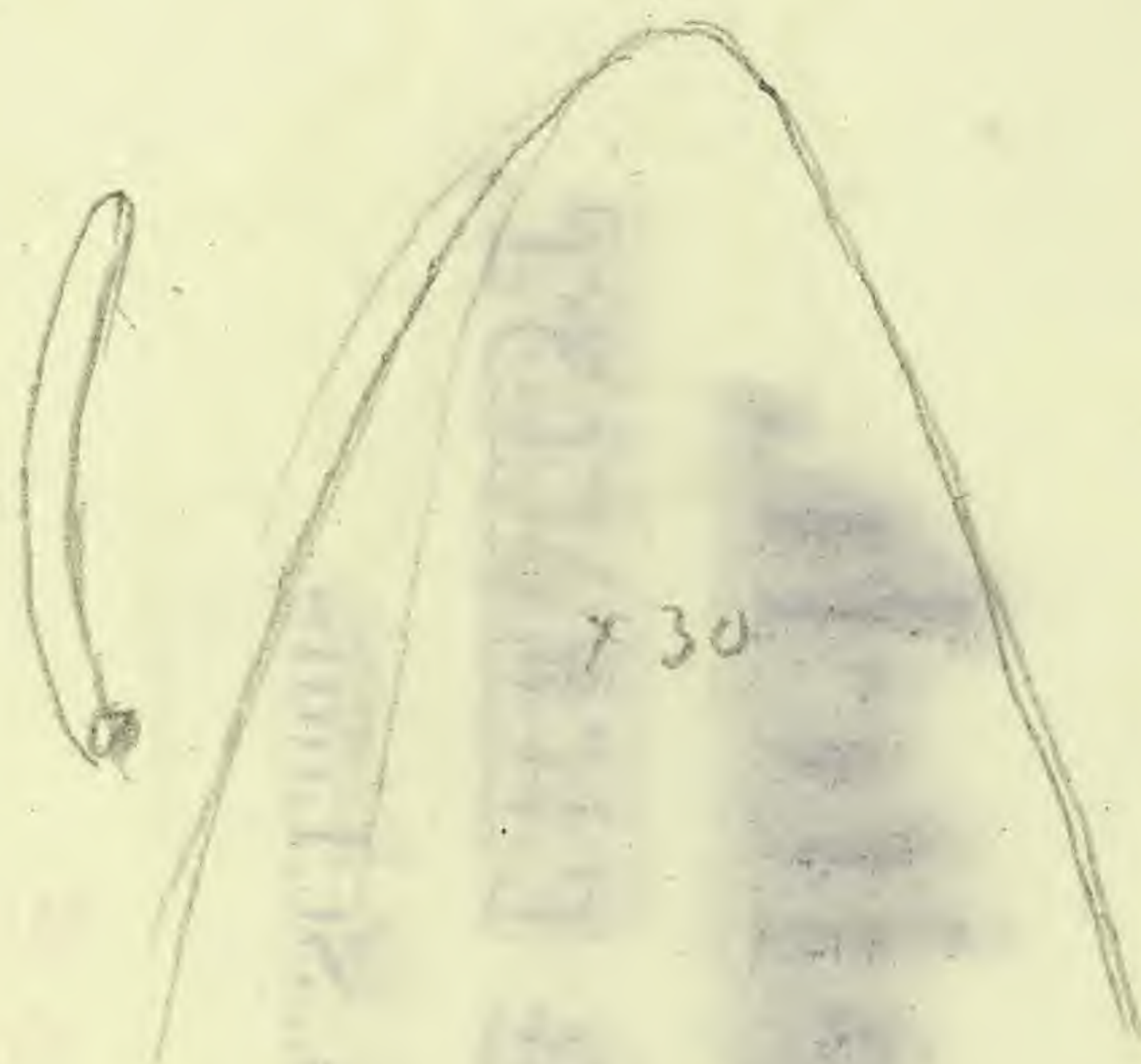
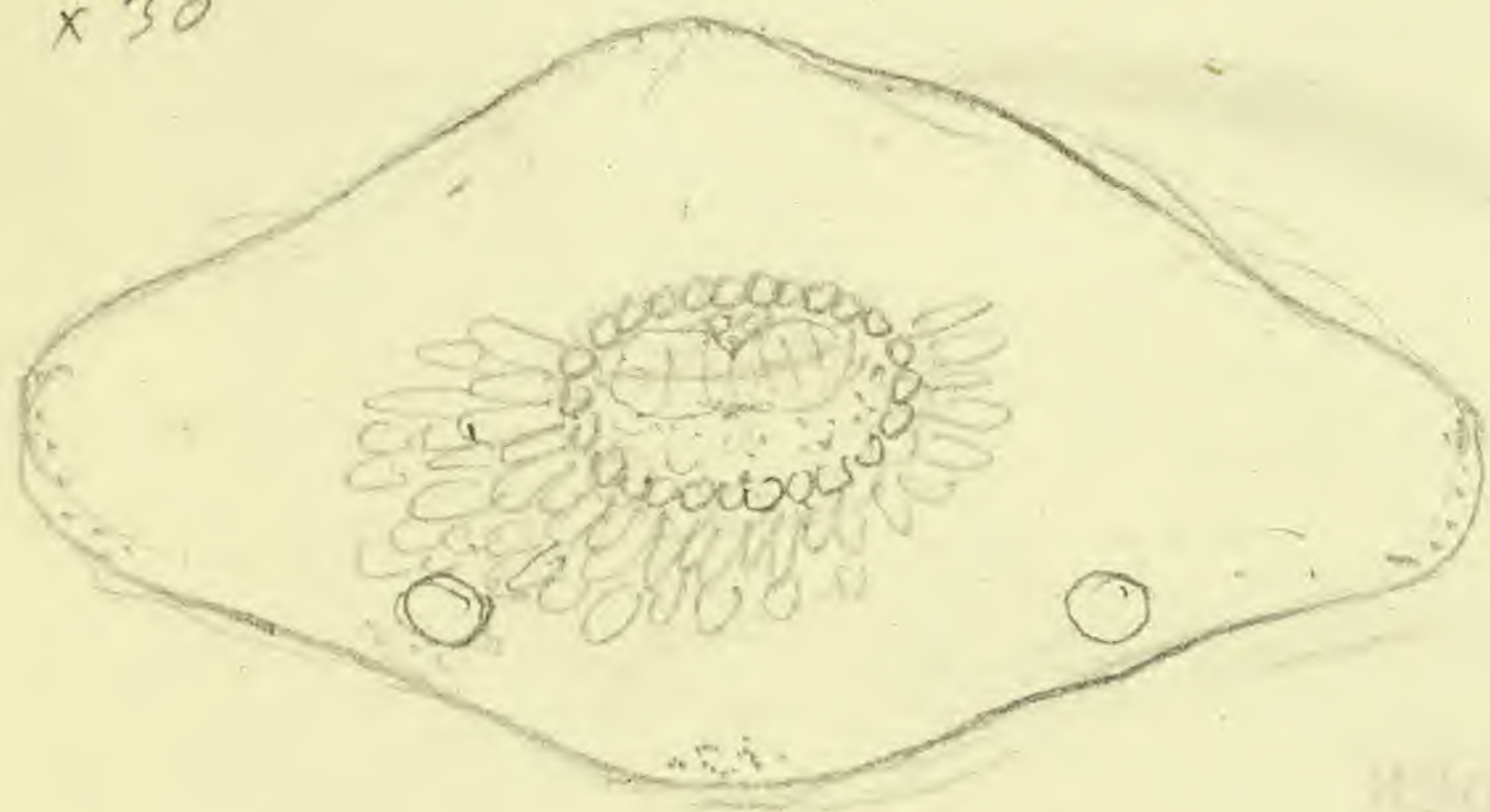
C

A megasporic
leaf of a vigorous shoot

Summer 1875

Febr 20 1876

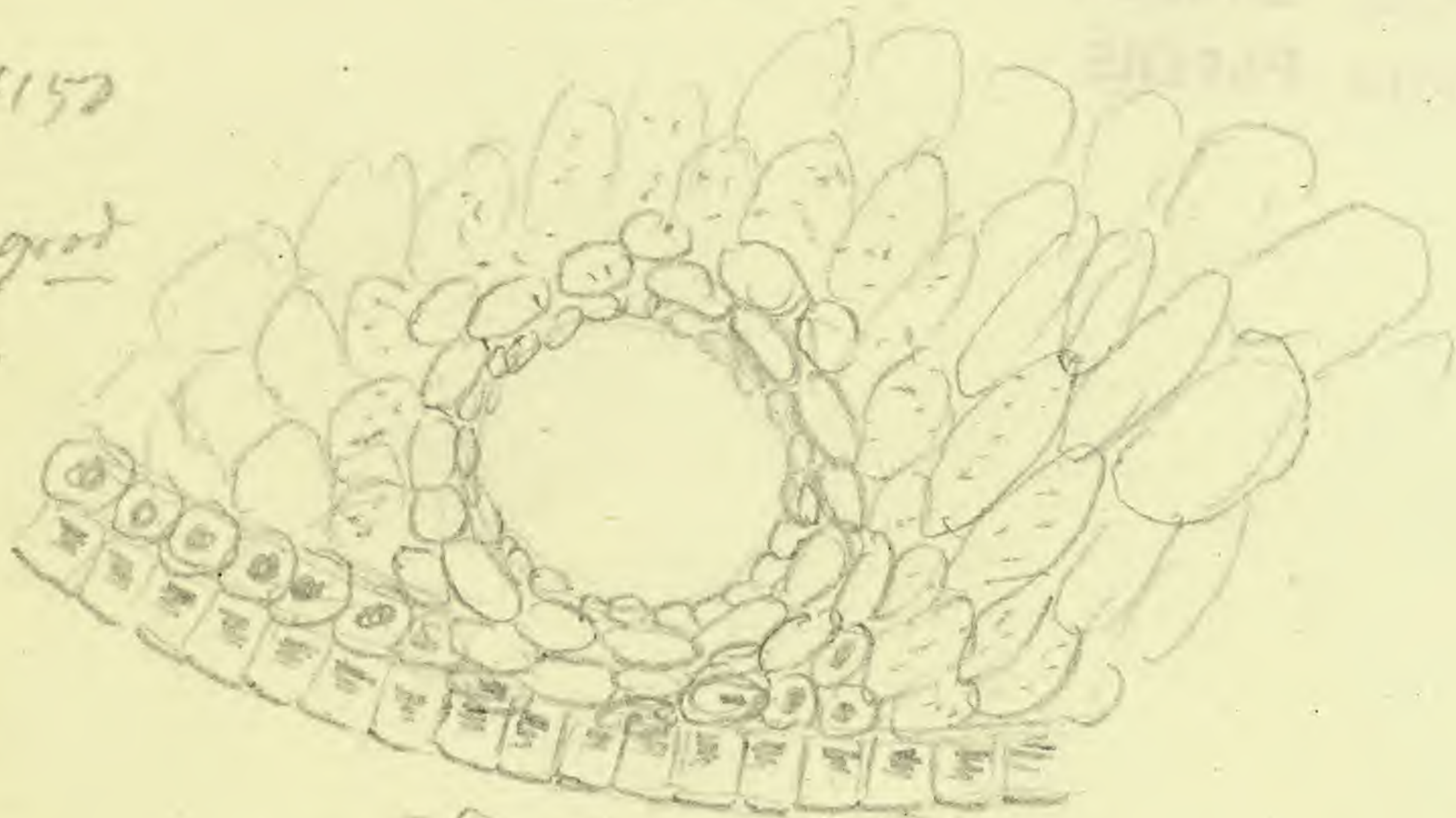
x 30



x 30

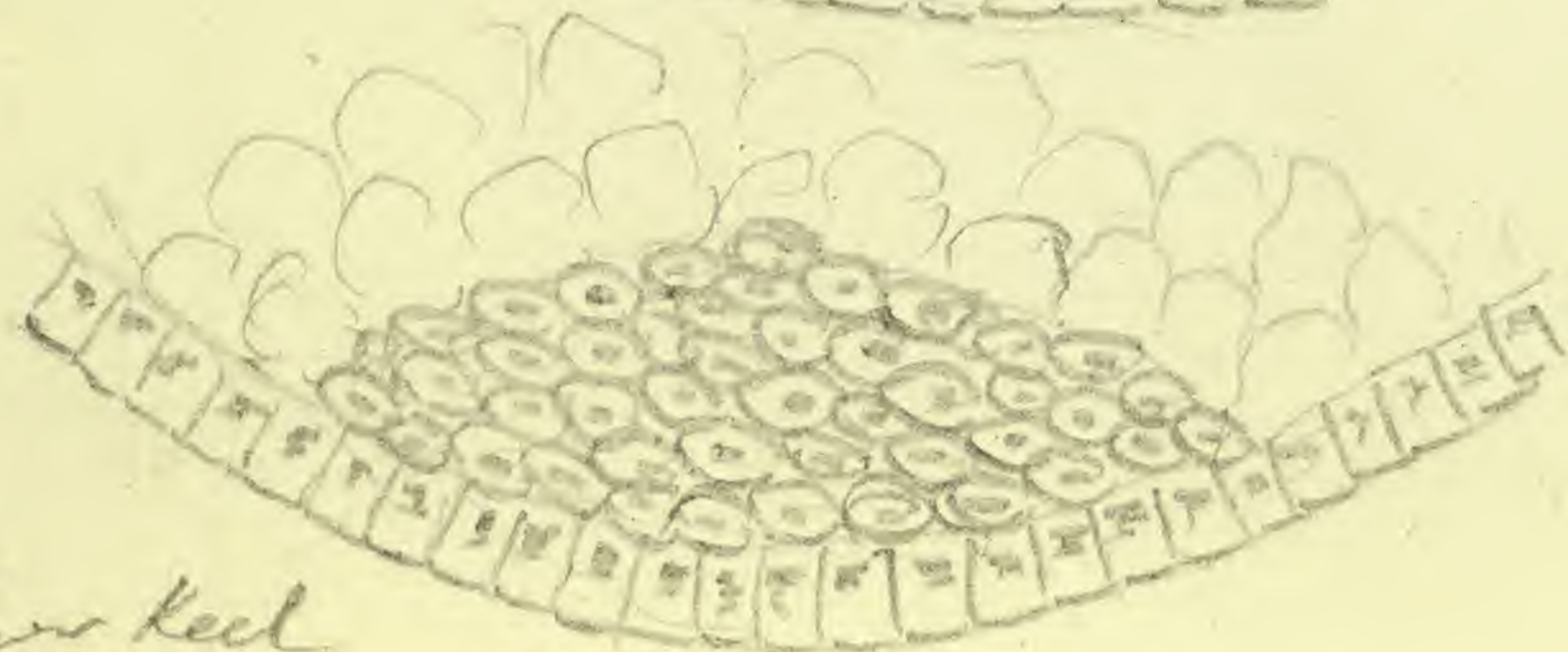
x 150

gird



Hypodermis cells on all surface,
most below

about 12 lines of stomata
above
4-5 in each band below



Lower leaf

x 150



0 1 2 3 4 5 6 7 8 9 10

cm

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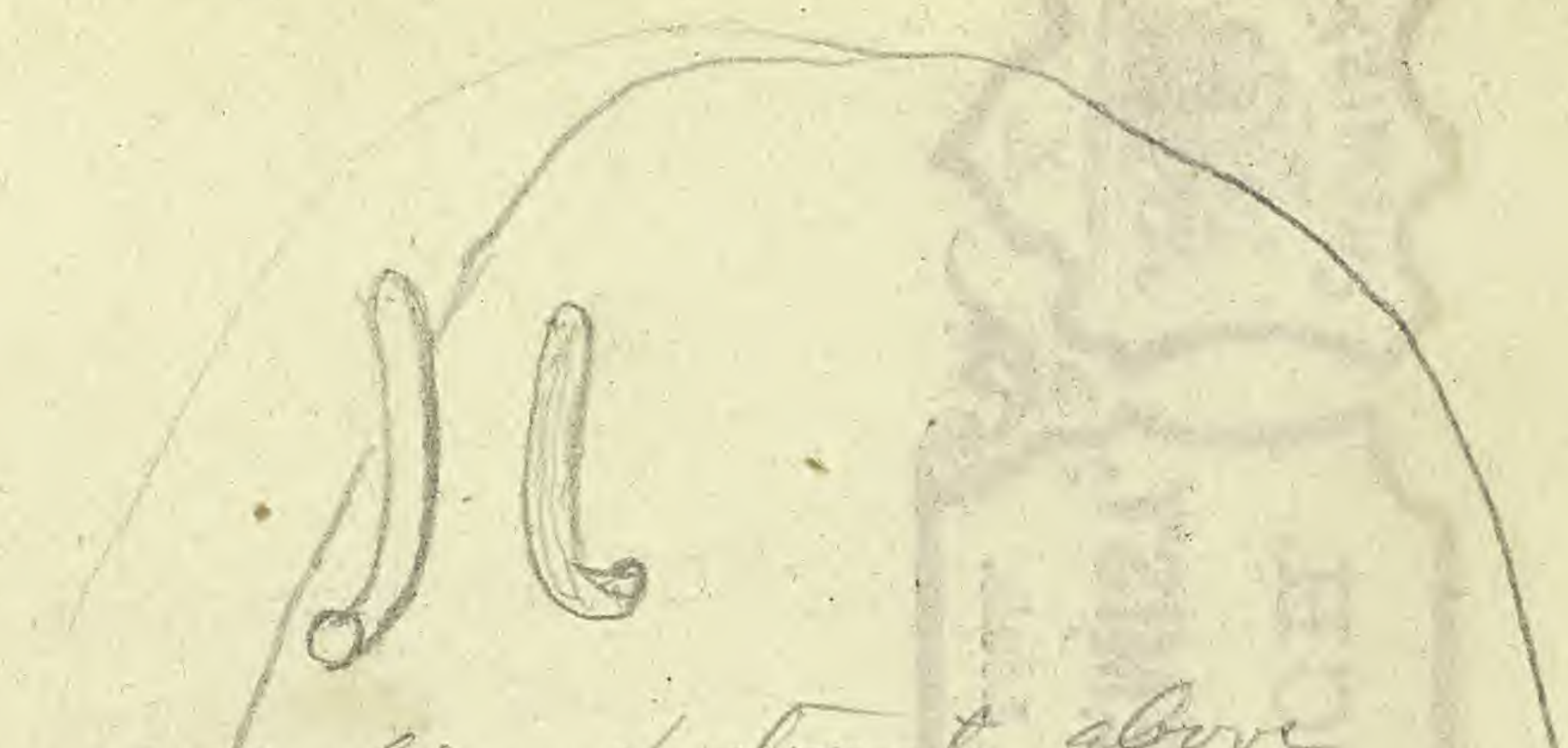
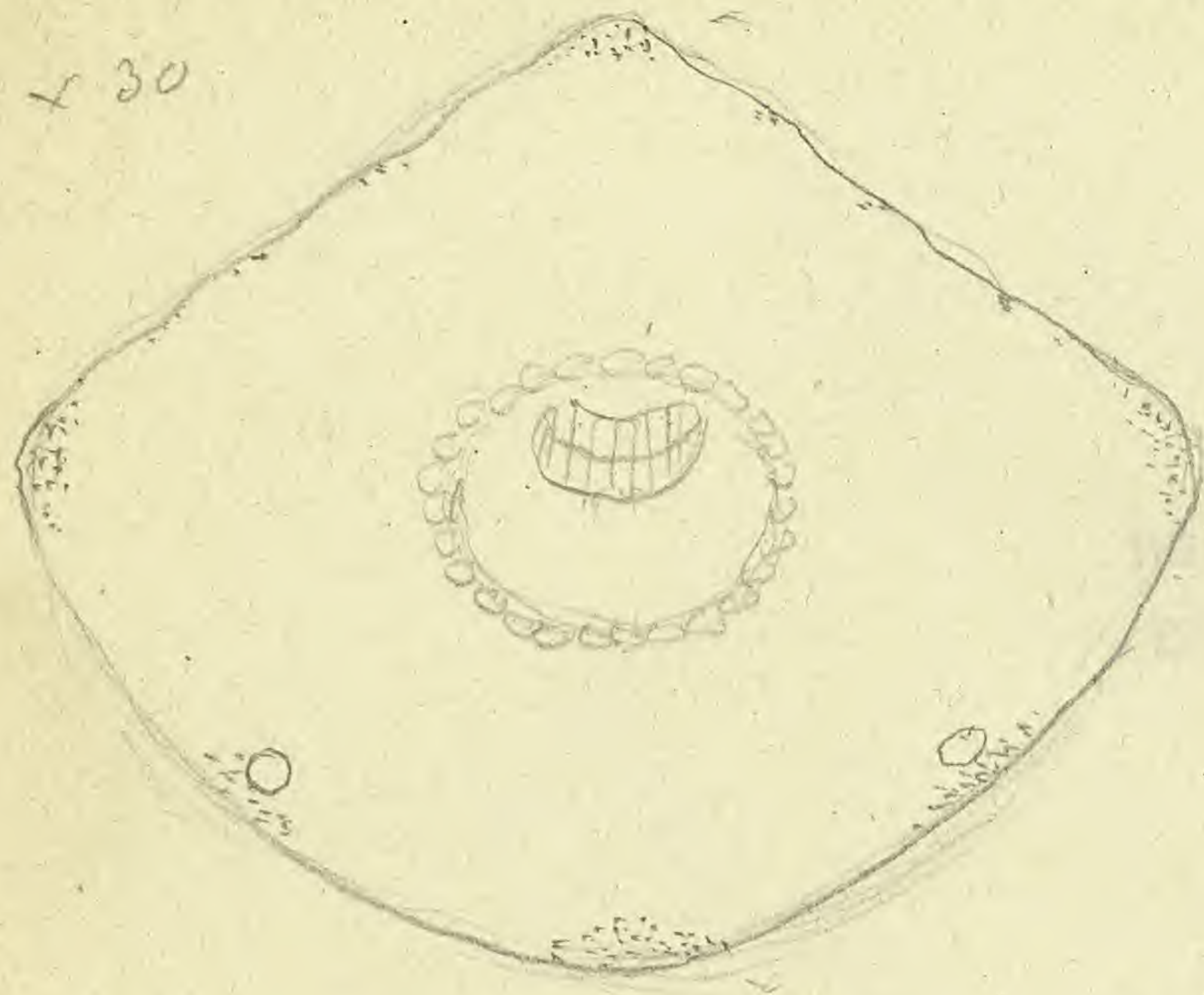
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Feb 20 1876

Abies arborescens
leaves from fertile branch
Desmon 1875

e

x 30



12-14 lines of stomata above
3-4 lines in 4 bands below
bands separated by epidermis (green
underlaid and strengthened by hypo-
dermic layers)

x 150



on the 4 angles heavy layers of hypodermis,
less thick, 2-4 and even 5 cells thick
less so under the ducts
also some clusters on the upper surface
fewer on the lower
leaves of male branch yet shorter, otherwise similar
All the thickens, upper leaves with similar
4 bands of stomata below



0 1 2 3 4 5 6 7 8 9 10

cm

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CHEMIST



A

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ALL THE NEW REMEDIES CONSTANTLY ON HAND



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Aletris magnifica

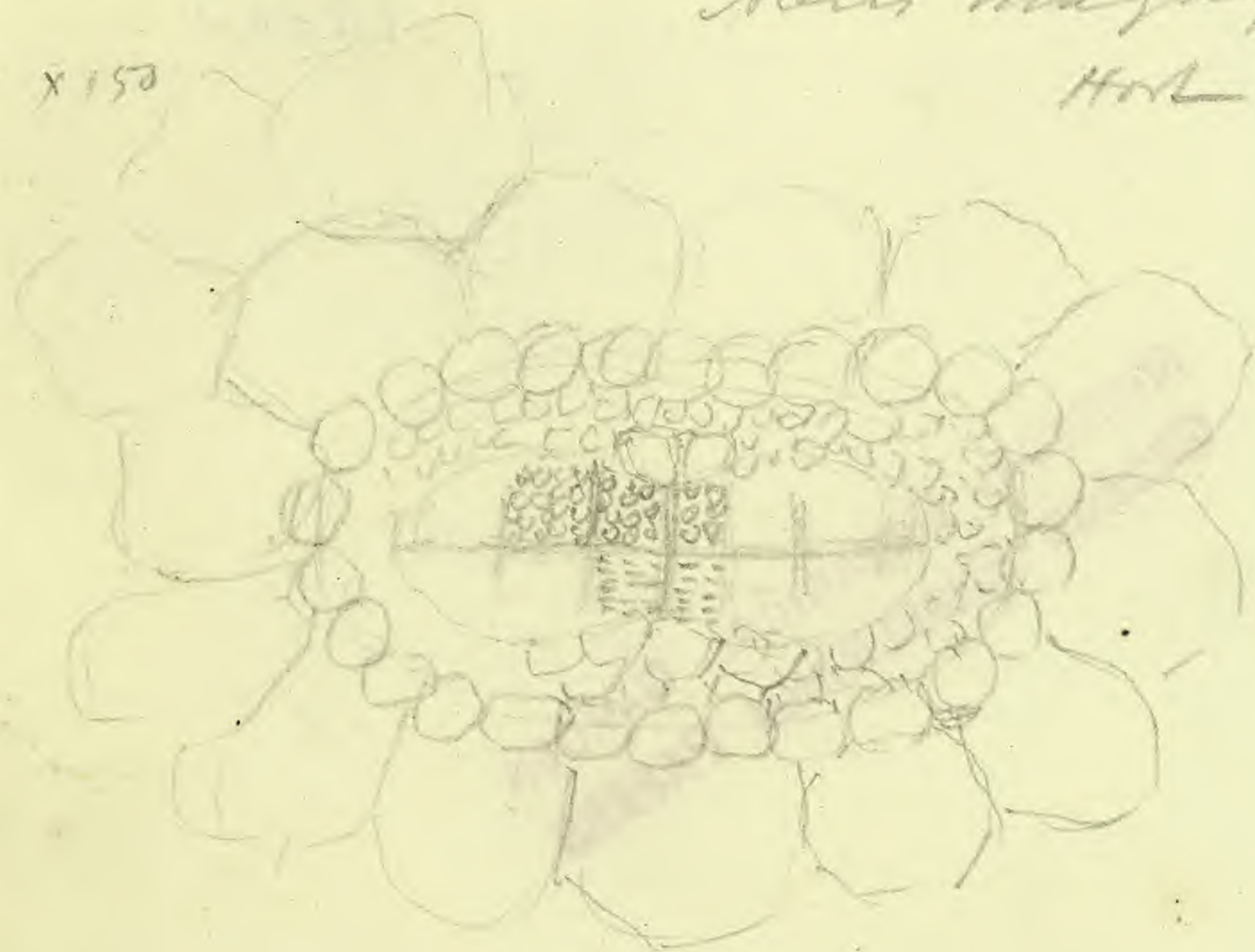
Febr 20 1876

Hort. Edinburgh Aug 20 1869

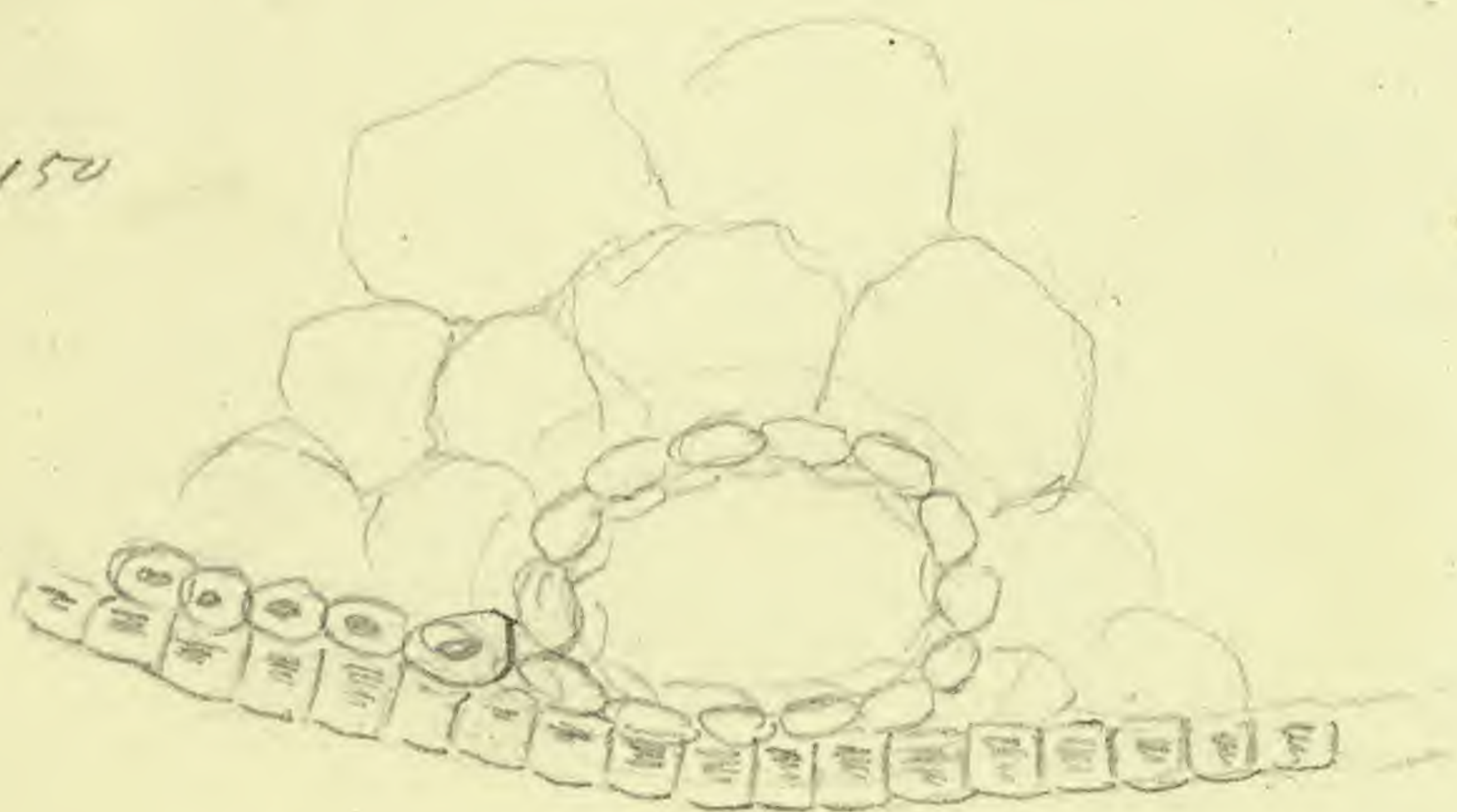
young tree

hypodermis on all 4 carinae

x 150



x 150



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HERBARIUM

ALERTS. 201A



0 1 2 3 4 5 6 7 8 9 10

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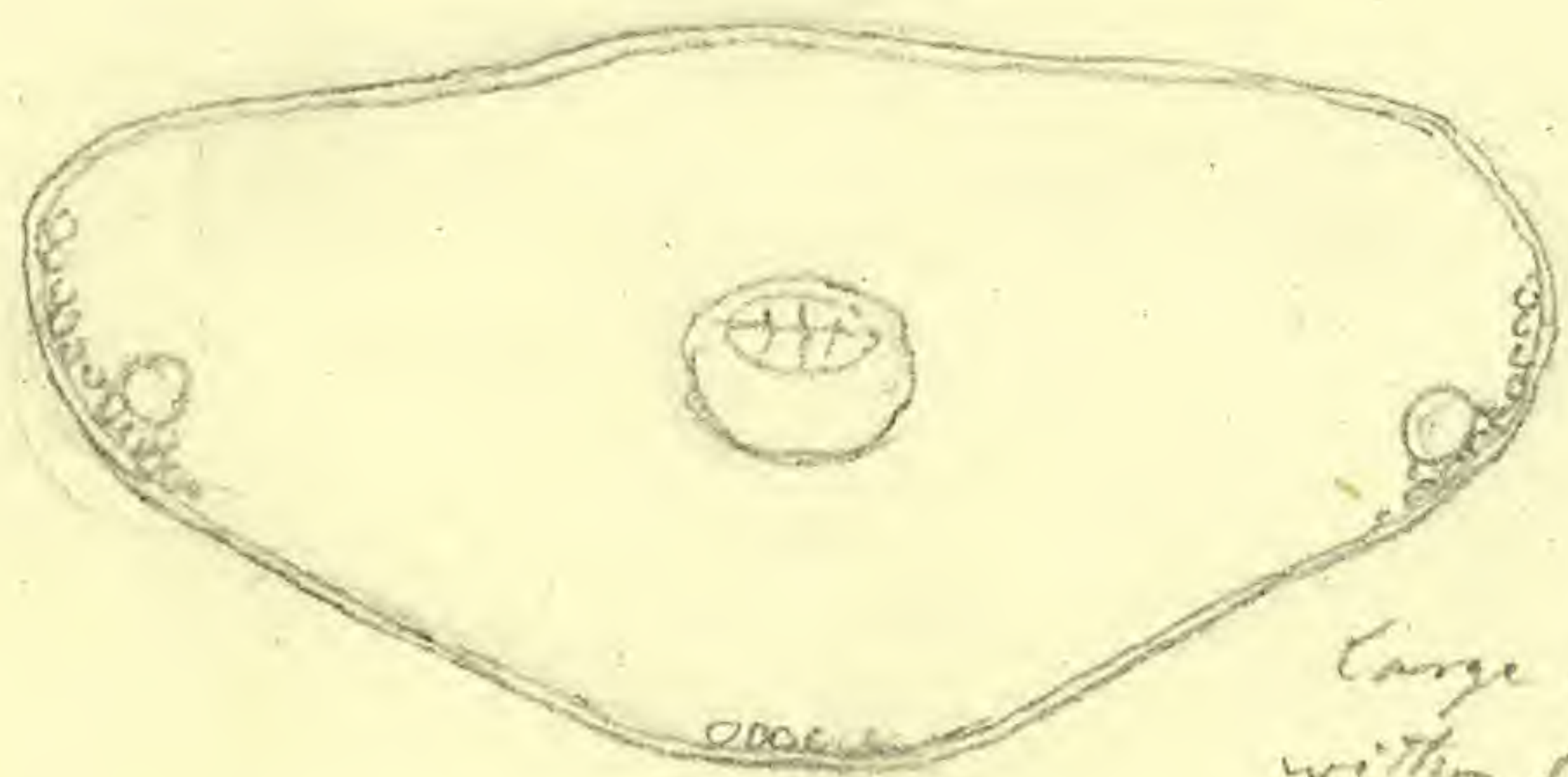
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Abies magnifica

April 1st 1881

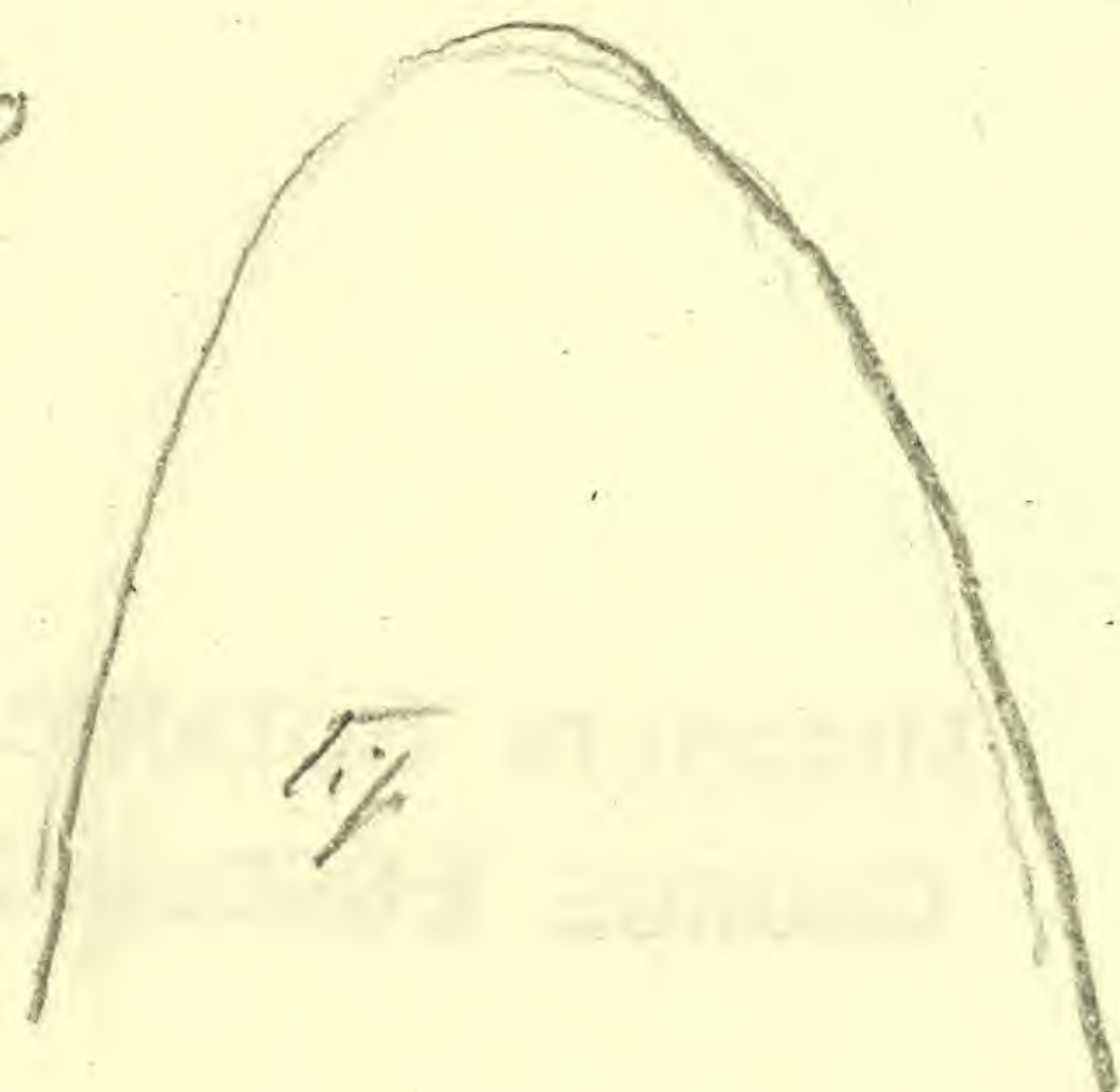
6 inches high, probably 5 years old

Sierra, Oct 1880

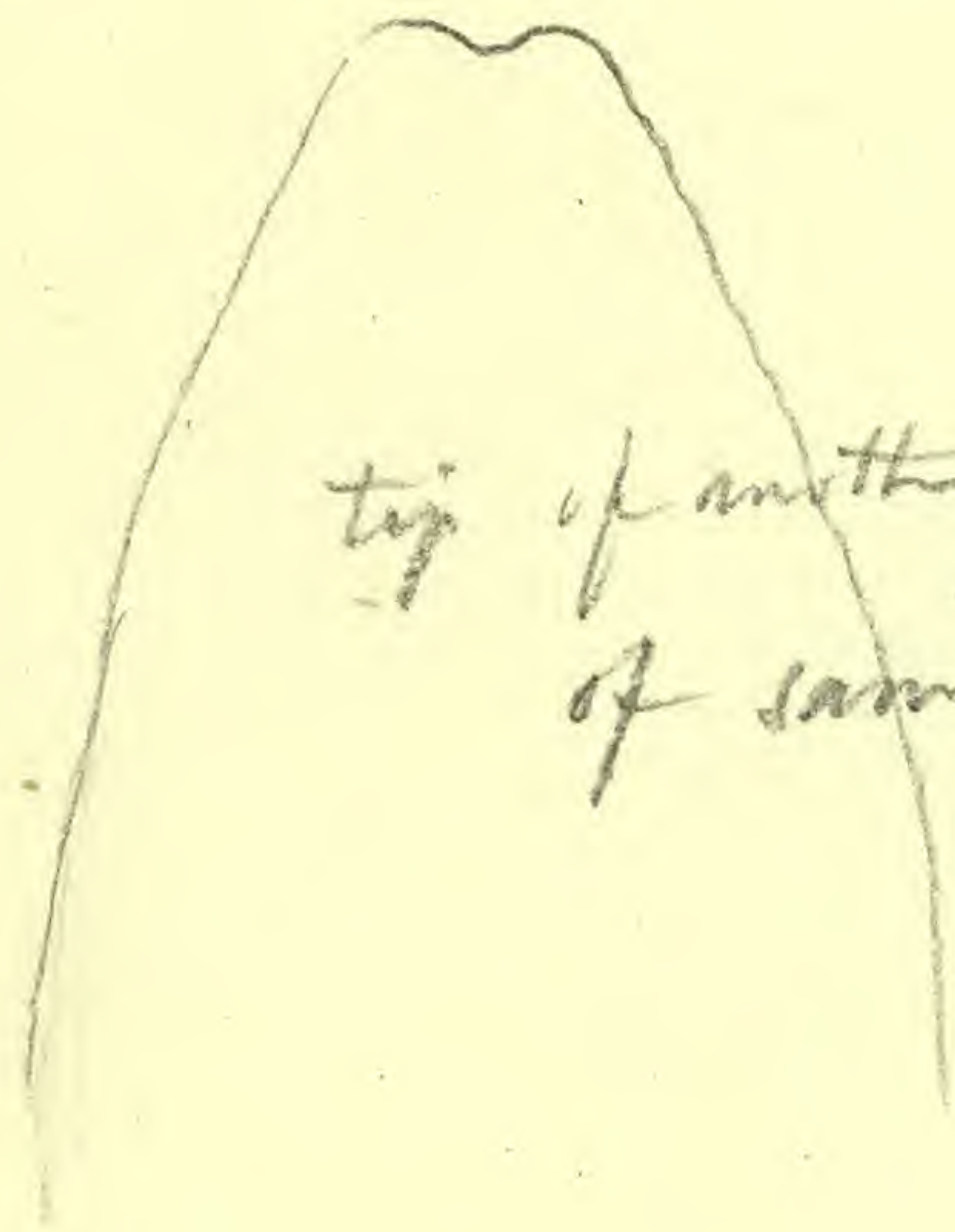


x 30

Large cells
with sheath



Tip



tip of another leaf
of same specimen
rarely a little
notched

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS
1880-1881
Sierra Nevada



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